A NEW

ORCHARD AND GARDEN:

OR,

The best way for Planting, Graffing, and to make any Ground good for a rich Orchard: Particularly in the North, and Generally for the whole Common-wealth, as in Nature, Reason, Situation, and all Probability, may and doth appear.

With the Country Houſ-wifes Garden for Herbs of Common uſe. Their Virtues, Seaſons, Profits, Ornaments, variety of Knots, Models for Trees, and Plots, for the beſt ordering of Grounds and Walks.

AS ALSO

The Husbandry of Bees, with their ſeveral Uſes and Annoyances:

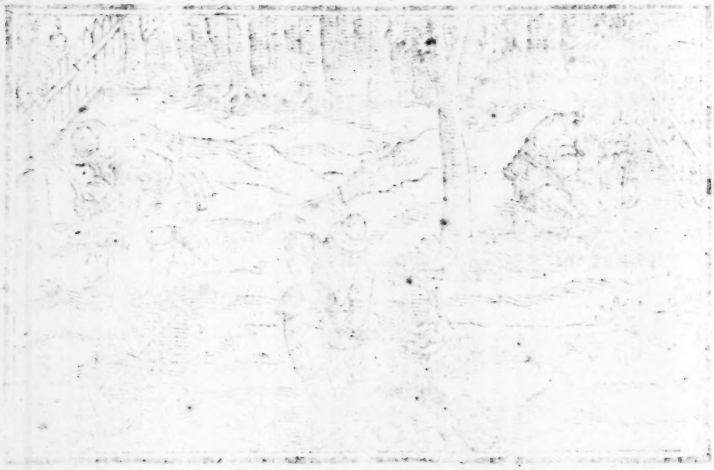
All being the experience of Forty and eight years Labour, and now the fifth time Corrected, and much Enlarged. By William Lawſon.

Whereunto is newly added the Art of Propagating Plants, with the true Ordering of all manner of Fruits, in their Gathering, Carrying home, and Preſervation.

Skil and pains, bring fruitful gains.

Nemo ſibi natus.

London, Printed for *George Sawbridge*. 1668.



To the Right Worshipfull

Sir *HENRY BELLOSES*,

Knight and Baronet.

Worthy Sir,

WHen in many years by long experience I had furnished this my Northern Orchard and Country-Garden with needfull Plants and usefull herbs, I did impart the view thereof to my Friends, who resorted to me to confer in matters of that nature; they did see it, and seeing it, desired it; and I must not deny now the publishing of it, (which then I allotted to my private delight) for the publick profit of others. Wherefore, though I could plead Custom, the ordinary excuse of all writers, to chuse a Patron and Protector of their works, and so shroud my self from scandall under your ho-

nourable favour, yet have I certain reaſons to excuſe this my preſumption: Firſt, the many courteſies you have vouchſafed me. Secondly, your delightfull skill in matters of this nature. Thirdly, the profit which I received from your learned diſcourſe of Fruit-trees. Fourthly, your animating and aſſiſting of others to ſuch indeavours. Laſt of all, the rare work of your own in this kind; all which to publiſh under your protection, I have adventured (as you ſee.) Vouchſafe it therefore entertainment, I pray you, and I hope you ſhall find it not the unprofitableſt ſervant of your retinue; for when your ſerious employments are over-paſſed, it may interpoſe ſome commodity, and raiſe you contentment out of variety.

Your Worſhips

moſt Bounden,

WILLIAM LAWSON,

THE

PREFACE,

To all Well-minded.

ART hath her first original out of Experience, which therefore is called The School-Mistriss of fools, because she teacheth infallibly, and plainly, as drawing her knowledge out of the course of Nature, (which never fails in the general) by the senses, feelingly apprehending, and comparing, (which the help of the Mind) the Works of Nature; and as in all other things naturall, so especially in Trees. For what is Art more than a provident and skilfull Correctrix of the faults of Nature in particular works, apprehended by the Senses? As when good ground naturally brings forth Thistles, trees stand too thick, or too thin, or disorderly, or (without dressing) put forth unprofitable Suckers, and such like; all which, and a thousand more, Art reformeth, being taught by Experience; and therefore must we count that art the surest, that stands upon Experimental Rules, gathered by the Rule of Reason, (not conceit) of all other Rules the surest.

Whereupon have I, of my meer and sole Experience, without respect to any former written Treatise, gathered these Rules, and set them down in writing, not daring to hide the least talent given me of my Lord and Master in Heaven. Neither is this injurious to any, though it differ from the Common opinion in divers points, to make it known to others, what good I have found out, in this faculty by long tryal and experience. I confess freely my want of curious skill in the art of planting: and I admire and praise Plinie, Aristotle, Virgil, Cicero, and

many others, for wit and judgment in this kind, and leave them to their times, manner, and several Countries.

I am not determined (neither can I worthily) to set forth the praises of this art; how some, and not a few, even of the best, have accounted it a chief part of earthly happiness, to have fair and pleasant Orchards, as in Hesperia *and* Thessaly; *how all with one consent agree, that it is a chief part of Husbandry,* (as Tully de Senectute) *and Husbandry maintains the world: how antient, how profitable, how pleasant it is; how many secrets of nature it doth contain, how loved, how much practised in the best places, and of the best. This hath been done by many: I only aim at the common good. I delight not in curious conceits, as planting and graffing with the Roots upwards, inoculating Roses on Thorns, and such like; although I have heard of divers, proved some, and read of more.*

The Stationer hath (as being most desirous with me, to further the common good) bestowed much cost and care in having the Knots and Models by the best Artizan cut in great variety, that nothing might be any way wanting to satisfie the curious desire of those that would make use of this Book.

And I shew a plain and sure way of planting, which I have found good by 48 *years (and more) experience in the North part of* England. *I prejudicate and envy none; wishing yet all to abstain from maligning that good (to them unknown) which is well intended. Farewell.*

Thine for thy good,

W. L.

THE

The best, sure, and readiest way to make a good ORCHARD *and* GARDEN.

CHAP. I.

Of the Gardener, and his Wages.

WHosoever desireth and indeavoureth to have a pleasant and profitable Orchard, must (if he be able) provide himself of a fruiterer, Religious, Honest, Skilfull in that faculty, and therewithall painfull. By Religious I mean (because many think Religion but a Fashion or Custom to go to Church) maintaining, and cherishing things religious: as Shools of Learning, Churches, Tythes, Church goods and rights, and above all things, Gods word, and the Preachers thereof, so much as he is able, practising prayers, comfortable conferences, mutual instruction to edifie, almes, and other works of charity, and all out of a good conscience. Religious.

Honesty in a Gardener, will grace your Garden, and all your house, and help to stay unbridled Serving men, giving offence to none, nor calling your Name into Question by dishonest acts, nor infecting your family by evil counsel or example. For there is no plague so infectious as popery and knavery, he will not purloin your profit, nor hinder your pleasures. Honest.

Concerning his skill, he must not be a Sciolist, to make a shew or take in hand that which he cannot perform, especially in so weighty a thing as an Orchard: than the which there can be no human thing more excellent, either for pleasure or profit, as shall (God willing) be proved in the treatise following. And what an hindrance shall it be, not onely to the owner, but to the common Skilfull.

mon good, that the unspeakable benefit of many hundred years shall be lost, by the audacious attempt of an unskilful Arborist?

Painful. The Gardener had not need be an idle or lazie Lubber, for so your Orchard, being a matter of such moment, will not prosper, there will ever be something to do. Weeds are alwayes growing, the great mother of all living Creatures, the Earth, is full of seed in her bowels, and any stirring gives them heat of Sun, and being laid neer day, they grow: Moles work daily, though not alwayes alike: Winter herbs at all times will grow (except in extreme frost). In winter your trees and herbs would be lightned of Snow, and your allies cleansed: drifts of Snow will set Deer, Hares, and Conies, and other noysome beasts, over your walls and hedges into your Orchard. When Summer cloaths your borders with green and speckled colours, your Gardener must dress his hedges, and antick works; watch his Bees, and hive them: Distil his Roses and other Herbs. Now begin Summer fruits to ripen, and crave your hand to pull them. If he have a Garden (as he must needs) to keep, you must needs allow him good help, to end his labours which are endless; for no one man is sufficient for these things.

Wages. Such a Gardener as will conscionably, quietly, and patiently travel in your Orchard, God shall Crown the labours of his hands with joyfulness, and make the clouds drop fatness upon your trees; he will provoke your love, and earn his wages and fees belonging to his place. The house being served, fallen fruit, superfluity of herbs, and flowers, seed, graffs, Sets, and besides all other of that fruit which your bountifull hand shall reward him withall, will much augment his wages, and the profit of your Bees will pay you back again.

If you be not able, nor willing to hire a Gardener, keep your profits to your self, but then you must take all the pains; and for that purpose (if you want this faculty) to instruct you, have I undertaken these labours, and gathered these Rules, but chiefly respecting my Countries good.

CHAP.

CHAP. II.
Of the Soyl.

FRuit-trees most common, and meetest for our Northern Countries: (as Apples, Pears, Cherries, Filbirds, Red and White, Plummes, Damsons, Bullis,) for we meddle not with Apricocks nor Peaches, nor scarcely with Quinces, which will not like in our cold parts, unless they be helped with some reflect of the Sun or other like means, nor with bushes bearing berries, as Barberries, Goose-berries or Grosers, Raspe-berries, and such like, though the Barbery be wholsome, and the Tree may be made great; do require (as all other Trees do) a black, fat, mellow, clean and well tempered soyl, wherein they may gather plenty of good sap. Some think the Hasel would have a chanily rock, and the sallow, and elder, a waterish marish. The soyl is made better by delving, and other means, being well melted, and the wildness of the earth and weeds (for every thing subject to man, and serving his use, (not well ordered) is by nature subject to the curse,) is killed by frost and drought, by fallowing and laying on heaps, and if it be wild earth, with burning. Kinds of trees. Soyl.

If your ground be barren (for some are forced to make an Orchard of barren ground) make a pit three quarters deep, and two yards wide, and round in such places where you would set your trees, and fill the same with fat, pure, and mellow earth, one whole foot higher than your soyl, and therein set your plant. For who is able to manure a whole Orchard plot, if it be barren? But if you determine to manure the whole site, this is your way; dig a trench half a yard deep, all along the lower, (if there be a lower side of your Orchard plot,) casting up all the earth on the inner side, and fill the same with good, short, hot, and tender muck; and make such another trench, and fill the same as the first, and so the third, and so throughout your ground; and by this means your plot shall be fertile for your life. But be sure you set your Trees neither in dung, nor barren earth. Barren earth.

Your ground must be plain, that it may receive, and keep moisture, not onely the rain falling thereon, but also water cast upon it, or desending from higher ground by sluces, Conduits, Plain.

&c. For I account moiſture in ſummer very needfull in the ſoyl of trees, and drought in winter, provided that the ground be neither boggy, nor the inundation be paſt 24 hours at any time, and but twice in the whole Summer, and ſo oft in the Winter. Therefore if your plot be in a bank, or have a deſcent, make trenches by degrees, allyes, walks, and ſuch like, ſo as the water may be ſtayed from paſſage; and if too much water be any hindrance to your walks, (for dry walks do well become an Orchard, and an Orchard them) raiſe your walks with earth firſt, and then with ſtones as big as wall-nuts, and laſtly, with gravel. In Summer you need not doubt too much water from heaven, either to hurt the health of your body, or your trees. And if over-flowing moleſt you, after one day, avoid it then by deep trenching.

Moiſt.

Some for this purpoſe dig the ſoyl of their Orchards, to receive moiſture, which I cannot approve: for the roots with digging are oftentimes hurt, and eſpecially being digged by ſome unskilful ſervant; for the Gardener cannot do all himſelf: And moreover, the Roots of Apples and Peares, being laid neer day, with the heat of the Sun, will put forth ſuckers, which are a great hinderance, and ſometimes with evil guiding, the deſtruction of trees, unleſs the delving be very ſhallow, and the ground laid very level again. Cherries and Plums, without delving, will hardly or never (after twenty years) be kept from ſuch ſuckers, nor Aſps.

Graſs.

Graſs alſo is thought needfull for moiſture, ſo you let it not touch the Roots of your trees; for it will breed moſs; and the boal of your tree neer the earth, would have the comfort of the Sun and Air.

Some take their ground to be too moiſt, when it is not ſo, by reaſon of water ſtanding thereon; for except in ſowre marſhes, ſprings, and continual over-flowings, no earth can be too moiſt. Sandy, and fat earth, will avoid all water falling, by receit: indeed a ſtiff clay will not receive the water, and therefore if it be graſſie, or plain, eſpecially hollow, the water will abide, and it will ſeem wateriſh, when the fault is in the want of ma uring, and other good dreſſing.

This plainneſs, which we require, had need be natural, becauſe to force any uneven ground, will deſtroy the fatneſs: for every

ſoyl

soyl hath his crust next day, wherein trees and herbs put their roots, and whence they draw their sap, which is the best of the soyl, and made fertil with heat and cold, moisture and drought, and under which, by reason of the want of the said temperature, by the said four qualities, no tree nor herb (in a manner) will or can put root; as may be seen, if in digging your ground, you take the weeds of most growth, as grass, or docks, (which will grow, though they lye upon the earth bare,) yet bury them under the crust, and they will sooner dye and perish, and become manure to your ground. This crust is not past 15 or 18 inches deep in good ground, or other grounds less. Hereby appears the fault of forced plains, *viz.* your crust in the lower parts is covered with the crust of the higher parts, and both with worse earth: your heights having the crust taken away, are become meerly barren; so that either you must force a new crust, or have an evil soyl. And be sure you level before you plant, lest you be forced to remove, or hurt your plants by digging, and casting among their roots. Your ground must be cleered, as much as you may, of stones and gravel, walls, hedges, bushes, and other weeds.

Naturally plain.

Crust of the earth.

CHAP. III.
Of the Site.

THere is no difference, that I find, betwixt the necessity of a good soyl, and a good Site of an Orchard: For a good soil (as is before described) cannot want a good Site; and if it do, the fruit cannot be good; and a good Site will much amend an evil soyl. The best Site is in low grounds, and (if you can) neer unto a River. High grounds are not naturally fat.

Low and neer a River.

And if they have any fatness by man's hand, the very descent in time doth wash it away. 'Tis with grounds in this case, as it is with men in a common wealth: Much will have more; and, Once Poor, seldome or never Rich. The Rain will scind and wash, and the wind will blow fatness from the heights to the hollows, where it will abide and fatten the earth, though it were barren before.

Hence it is, that we have seldome any plain grounds, and low, a barren, and as seldome any heights naturally fertile. It is

unspeakable, what fatness is brought to low grounds by inundations of waters; neither did I ever know any barren ground in a low plain by a River side. The goodness of the soyl in *Howle* or *Hollowderness* in *York-shire*, is well known to all that know the River *Humber*, and the huge bulks of their Cattel there. By estimation of those that have seen the low grounds in *Holland* and *Zealand*, they far surpass most Countries in *Europe* for fruitfulness, and onely because they lye so low. The world cannot compare with *Egypt* for fertility, so far as *Nilus* doth overflow his banks: So that a fitter place cannot be chosen for an Orchard, then a low plain by a River side. For besides the fatness which the water brings, if any cloudy mist or rain be stirring, it commonly falls down to, and follows the course of the River. And where see we greater Trees of bulk and bough, then standing on, or neer the water side? If you ask why the plains in *Holderness*, and such Countries, are distitute of wood? I answer, that men and cattel (that have put trees thence, from out of plains to void corners) are better than trees. Neither are those places without trees. Our old Fathers can tell us how woods are decayed, and people in the room of trees multiplyed. I have stood somewhat long in this point, because some do condemn a moist soyl for fruit-trees.

Psal. 1. 3.
Ezek. 17. 8.
Ecclus. 39. 17.
Mr. *Markham.*

Winds.
Chap. 13.

A low ground is good to avoid the danger of winds, both for shaking down your unripe fruit. Trees (the most that I know) being loaden with wood for want of proyning, and growing high by the unskilfulness of the Arborist, must needs be in continual danger of the South-West, West and North-west winds, especially in *September* and *March*, when the air is most temperate from extreme heat and cold, which are deadly enemies to great winds. Wherefore, chuse your ground low: Or if you be forced to plant in a higher ground, let high and strong walls, houses and trees, as Wall-nuts, Plane-trees, Oaks and Ashes, placed in good order, be your fence for winds.

The sucken of your dwelling house, descending into your Orchard, if it be cleanly conveyed, is good.

Sun.

The Sun, in some sort, is the life of the world: it maketh proud growth, and ripens kindly and speedily, according to the golden Tearm, *Annus fructificat, non tellus.* Therefore, in the Countries

Countries neerer approaching the Zodiack, the Suns habitation, they have better, and sooner ripe fruit, then we that dwel in these frozen parts.

This provoketh most of our great Arboristsʼ to plant Apricocks, Cherries, and Peaches, by a wall, and with tacks, and other means to spread them upon, and fasten them to a wall, to have the benefit of the immoderate reflex of the Sun, which is commendable, for the having of fair, good, and soon ripe fruit. But let them know, it is more hurtfull to the trees than the benefit they reap thereby, as not suffering a tree to live the tenth part of his age; it helps Gardeners to work. For first, the wall hinders the roots; because into a dry and hard wall of earth or stone, a tree will not, nor cannot put any root to profit, but especially it stops the passage of the sap, whereby the bark is wounded, and the wood and diseases grow, so that the tree becomes short of life. For as in the body of man, the leaning or lying on some member, whereby the course of blood is stopt, makes that member as it were dead for the time, till the blood return to his course, and I think, if that stopping should continue any time, the member will perish for want of blood, (for the life is in the blood) and so indanger the body; so the sap is the life of the tree, as the blood is to mans body: neither doth the tree in winter (as is supposed) want his sap, no more than mans body his blood, which in winter, and time of sleep, draws inward: so that the dead time of winter, to a tree, is but a night of rest: for the tree at all times, even in winter, is nourish'd with sap and growth as well as mans body. The chilling cold may well some little time stay or hinder the proud course of the sap, but so little and so short a time, that in calm and mild seasons, even in the depth of winter, if you mark it, you may easily perceive the sap to put out, and your trees to increase their buds which were formed in the Summer before, and may easily be discerned; for leaves fall not off, till they be thrust off with the knots or buds, whereupon it comes to pass, that trees cannot bear fruit plentifully two years together, and make themselves ready to blossom against the seasonableness of the next spring. Trees against a wall.

And if any frost be so extreme, that it stay the sap too much, or too long, then it kills the forward fruit in the bud, and sometimes

times the tender leaves and twigs, but not the tree: Wherefore to return, it is perilous to ſtop the ſap. And where, or when did you ever ſee a great tree packt on a wall? Nay, who did ever know a tree ſo unkindly ſplat, come to age? I have heard of ſome that out of their imaginary cunning, have planted ſuch trees on the North ſide of the wall, to avoid drought: but the heat of the Sun is as comfortable (which they ſhould have regarded) as the drought is hurtfull. And although water is a ſovereign remedy againſt drought, yet want of Sun is no way to be helped. Wherefore, to conclude this Chapter, let your ground lye ſo, that it may have the benefit of the South and weſt Sun, and ſo low and cloſe, that it may have moiſture, and increaſe his fatneſs, (for trees are the greateſt ſuckers and pillers of the earth) and (as much as may be) free from great winds.

CHAP. IV.
Of the Quantity.

IT would be remembred what a benefit riſeth, not onely to every particular owner of an Orchard, but alſo to the commonwealth by fruit, as ſhall be ſhewed in the ſixteenth Chapter (God willing); whereupon muſt needs follow, the greater the Orchard is (being good, and well kept) the better it is: for of good things, being equally good, the biggeſt is the beſt. And if it ſhall appear, that no ground a man occupieth, (no, not the Corn-field) yieldeth more gain to the purſe, and houſe-keeping (not to ſpeak of the unſpeakable pleaſure) quantity for quantity, then a good Orchard, (beſides, the coſt in planting and dreſſing an Orchard is not ſo much by far, as the labour and Seeding of your Corn-fields, nor for durance of time comparable, beſides the certainty of the one before the other) I ſee not how any labour or coſt in this kind, can be idely or waſtfully beſtowed, or thought too much. And what other thing is a Vineyard, in thoſe Countries where Vines do thrive, then a large Orchard of trees bearing fruit; or what difference is there in the juyce of the Grape, and our Cyder and Perry, but the goodneſs of the ſoyl, and clime where they grow? which maketh the one more ripe, and ſo more pleaſant than the other. Whatſoever can be ſaid for the

Orchard as good as a Corn-field.

Compared with a Vineyard.

the benefit rising from an Orchard, that makes for the largeness of the Orchard bounds. And me-thinks they do preposterously, that bestow most cost and labour, and more ground in and upon a Garden, then upon an Orchard, whence they reap and may reap both more pleasure and more profit, by infinite degrees. And further, that a Garden never so fresh, and fair, and well kept, cannot continue without both renewing of the earth and the herbs often, in the short and ordinary age of a man: whereas your Orchard well kept, shall dure divers hundred years, as shall be shewed Chapter 14. In a large Orchard there is much labour saved, in fencing and otherwise: for three little Orchards or a few trees, being in a manner all out-sides, are so blasted and dangered, and commonly in keeping neglected, and require a great fence; whereas in a great Orchard, trees are a mutual fence one to another, and the keeping is regarded; and less fencing serves six acres together, then three in several inclosures. Compared with a Garden.

Now what quantity of ground is meetest for an Orchard, can no man prescribe, but that must be left to every mans several judgment, to be measured according to his ability and will; for other necessaries besides fruit must be had, and some are more delighted with Orchards than others. What quantity of ground.

Let no man, having a fit plot, plead poverty in this case; for an Orchard once planted, will maintain it self, and yield infinite profit beside. And I am perswaded, that if men did know the right and best way of planting, dressing, and keeping trees, and felt the profit and pleasure thereof, both they that have no Orchards, would have them, and they that have Orchards would have them larger, yea, fruit-trees in their hedges, as in *Worcester-shire*, &c. And I think the want of planting is a great loss to our Common-wealth, and in particular, to the owners of Lordships, which Landlords themselves might easily amend, by granting longer time and better assurance to their Tenants, who have taken up this Proverb, *Botch and sit, Build and flit*: for who will build or plant for another mans profit? Or the Parliament might enjoyn every occupier of grounds to plant and maintain for so many acres of fruitfull ground, so many several trees, or kinds of trees for fruit. Thus much for quantity. What is no hindrance. How Land-Lords by their Tenants may make flourishing Orchards in *England*.

CHAP.

A. All these squares must be set with Trees, the Garden and other Ornaments must stand in spaces betwixt the trees, and in the borders and fences.

B. Trees twenty yards asunder.
C. Garden Knots.

D. Kitching Garden.
E. Bridge,
F. Conduit.
G. Staires.

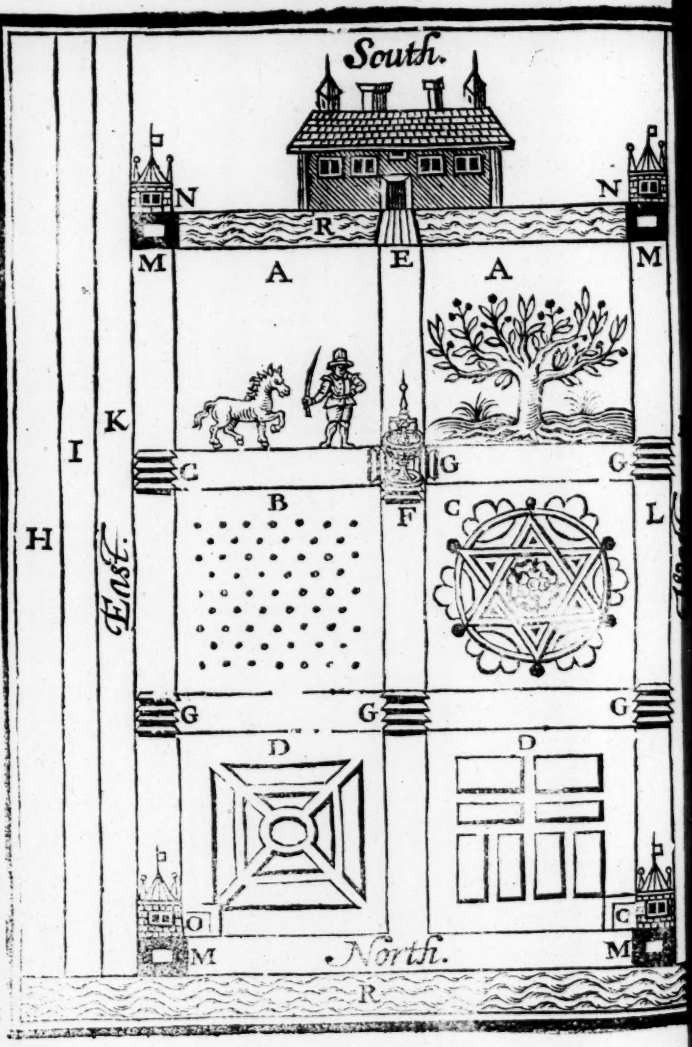
H. Walks set with great wood thick.
I. Walks set with great wood round about your Orchard.

K. The Out fence.
L. The Out fence set with stone-fruit.

M. Mount. To force earth for a Mount or hill (*k*), set it round with quick, and lay boughes of trees strangely intermingl'd, the top inward, with the earth in the middle.

N. Still-house.
O. Good standing for Bees, if you have an house.

P. If the River run by your door, and under your Mount it will be pleasant.



CHAP. V.
Of the Form.

THe goodness of the soil and site, are necessary to the well-being of an Orchard simply; but the form is so far necessary, as the owner shall think meet. For that kind of form wherewith every particular man is delighted, we leave it to himself, *Suum cuique pulchrum.* The form that men like in general, is a square: for although roundness be *forma perfectissima*, yet that principle is good, where necessity by art doth not force some other form. If within one large square, the Gardiner shall make one round Labyrinth or Maze, with some kind of Berr es, it will grace your form, so there be sufficient room left for walks, so will four or more round knots do, for it is to be noted, that the eye must be pleased with the form. I have seen squares rising by degrees, with stairs from your house-ward, according to this form which I have, *Crassa quod aiunt Minerva*, with an unsteady hand, rough hewen: for in forming Country gardens, the better sort may use better forms, and more costly work. What is needfull more to be said, I refer all that (concerning the form) to the Chapter 17. of the Ornaments of an Orchard.

The usual form is a square.

CHAP. VI.
Of fences.

ALL your labour past and to come about an Orchard is lost, unless you fence well: It shall grieve you much to see your young sets rubd loose at the Roots, the bark pild, the boughs and twigs cropt, your fruit stoln, your Trees broken, and your many years labours and hopes destroyed, for want of fences. A chief care must be had in this point: you must therefore plant in such a soyl, where you may Provide a convenient, strong, and seemly fence. For you can possess no goods, that have so many enemies as an Orchard, look Chapter 13. Fruits are so delightsome, and desired of so many, (nay, in a manner of all) and yet few will be at cost, and take pains to provide them. Fence well therefore, let your plot be wholly in your own power, that you

Effects of evil fencing.

Let the fence be your own.

make all your fence your ſelf: for neighbours fence is none at all, or very careleſs. Take heed of a door or window, (yea of a wall) of any other mans into your Orchard, yea, though it be nailed up, or the wall be high, for perhaps they will prove theeves.

Kinds of Fences, earthen walls.

All fences commonly are made of Earth, Stone, Brick, Wood, or both earth and wood: Dry wall of earth, and dry ditches are the worſt fences ſave pales or railes, and do waſte the ſooneſt, unleſs they be well copt with Glooe and morter, whereon at Michael tide it will be good to ſow Wall-flowers, commonly called Bee flowers, or winter Gilly-flowers, becauſe they will grow (though among ſtones) and abide the ſtrongeſt froſt and drought, continually green and flowring even in winter, and have a pleaſant ſmell, and are timely, (that is, they will flower the firſt and the laſt of flowers) and are good for Bees. And your earthen wall is good for bees, dry and warm, but theſe fences are both unſeemly, evil to repair, and onely for need, where ſtone or wood cannot be had. Whoſoever makes ſuch walls, muſt not pill the ground in the Orchard, for getting earth, nor make any pits or hollowes, which are both unſeemly and unprofitable: Old dry earth mixt with ſand is beſt for theſe. This kind of wall will ſoon decay by reaſon of the Trees which grow neer it, for the roots and boals of great Trees, will increaſe, undermine, and over-turn ſuch walls, though they were of ſtone, as is apparent by Aſhes, Round-trees, Burt-trees, and ſuch like, carried in the chat, or berry, by birds into ſtone walls.

Pale and Rail.

Fences of dead wood, as pales, will not laſt, neither will railes either laſt or make good fence.

Stone walls.

Stone walls, (where ſtone may be had) are the beſt of this ſort, both for fencing, laſting, and ſhrouding of your young trees, but about this you muſt beſtow much Pains and more coſt, to have them handſome, high and durable.

Quick wood and Moats.

But of all other (in mine opinion) Quick wood and moats, or ditches of water, where the ground is Level, is the beſt fence: In unequal grounds, which will not keep water, there a double ditch may be caſt, made ſtreight and Level on the top two yards broad for a fair walk, five or ſix foot higher than the ſoyl, with a gutter on either ſide, two yards wide, and four foot deep, ſet without with three or four cheſs of thorns, and within with Cherries,

Plums,

Plums, Damſons, Bullis, Filbirds, (for I love thoſe trees better for their fruit, and as well for their form, as Privit,) for you may make them take any form. And in every corner, (and middle if you will) a mount would be Raiſed, whereabout the wood may claſpe, poudered with wood-bind, which will make with dreſſing a fair, pleaſant, profitable, and ſure fence. But you muſt be ſure that your quick thorns either grow wholly, or that there be a ſupply betimes, either planting new, or plaſhing the old where need is. And aſſure your ſelf, that neither wood, ſtone, earth, nor water, can make ſo ſtrong a fence as this at ſeven years growth.

Moats, Fiſh-ponds, and (eſpecially at one ſide a River) within and without your fence, will afford you fiſh, fence, and moiſture to your Trees; and pleaſure alſo, if they be ſo great and deep that you may have Swans, and other water Birds, good for devouring of vermine, and boat for many good uſes. Moats.

It ſhall hardly avail you to make any fence for your Orchard, if you be a niggard of your fruit. For as Liberality will ſave it beſt from noiſome neighbours, (Liberality I ſay is the beſt fence) ſo juſtice muſt reſtrain Rioters. Thus when your ground is tempered, ſquared and fenced, it is time to provide for planting.

CHAP. VII.
Of Sets.

THere is not one point (in my Opinion) about an Orchard more to be regarded, than the choice getting and ſetting of good plants, either for readineſs of having good fruit, or for continual laſting, for whoſoever ſhall fail in the choice of good ſets, or in getting, or gathering, or ſetting his plants, ſhall never have a good or laſting Orchard. And I take want of skill in this faculty, to be a chief hinderance to the moſt Orchards, and to many for having Orchards at all.

Some for Readineſs uſe ſlips, which ſeldome take Root, and if they do take, they cannot laſt, both becauſe their Root having a main wound will in ſhort time decay the body of the Tree: and beſides, that Roots being ſo weakly put, are ſoon nipt with drought or froſt, I could never ſee (lightly) any ſlip, but of apples onely, ſet for Trees. Slips.

Bur-knot.

A Bur-knot kindly taken from an Apple-tree, is much better and surer. You must cut him close at the Root end, an handful under the knot, (some use in Summer about Lammas, to circumcise him, and put earth to the knots with hay-Ropes, and in winter cut him off and set him; but this is curiosity needless, and danger with removing and drought) and cut away all his twigs save one, the most principal, which in setting you must leave above the earth, burying his trunck in the crust of the earth for his Root. It matters not much what part of the bough the twigs grow out of. If it grow out of, or neer the Root end, some say such an apple will have no core nor kernel. Or if it please the planter he may let his bough be crooked, and leave out his top end one foot, or somewhat more, wherein will be good grafting; if either you like not, or doubt the fruit of the bough, (for commonly your bur-knots are Summer fruit) or if you think he will not Recover his wound safely.

Usual sets.

The most usual kind of Sets, are plants with Roots growing, of kernels of Apples, Pears, and Crabbs, or stones of Cherries, Plums, &c. removed out of a nursery, wood, or other Orchard, into, and set, in your Orchard in due places; I grant this kind to be better than either of the other by much, as more sure and more durable. Herein you must note, that in Sets so removed, you get all the Roots you can, and without bruising of any, I utterly dislike the opinion of those great Gardeners, that following their books, would have the main Roots cut away: for tops cannot grow without Roots. And because none can get all the Roots, and removal is an hinderance, you may not leave on all tops, when you set them: For there is a proportion betwixt the Top and Root of a Tree, even in the number, (at least in the growth) If the Roots be many, they will bring you many Tops, if they be not hindered. And if you use to stow or top your tree too much, or too low, and leave no issue, or little for sap, (as is to be seen in your hedges) it will hinder the growth of Roots and boal, because such a kind of stowing is a kind of smothering or choaking the sap. Great Wood, as Oak, Elm, Ash, &c. being continually kept down with sheer knife, ax, &c. neither boal nor Root will thrive, but as an hedge or bush. If you intend to graff in your sets, you may cut him closer with a greater wound, and neerer the earth with-

Main Roots cut.

Stow sets removed.

within a foot or two, because the graft or grafts will cover his wound. If you like his fruit, and would have him to be a Tree of himself, be not so bold. This I can tell you, that though you do cut his top close, and leave nothing but his bulk, because his roots are few, if he be (but little) bigger than your thumb, (as I wish all plants removed to be) he will safely recover his wound within seven years, by good guidance, that is, if the next time of dressing, immediately above his uppermost sprig, you cut him off aslope cleanly, so that the sprig stand on the back-side, (and if you can Northward, that the wound may have the benefit of the Sun) at the upper end of the wound, and let that sprig onely be the boal. And take this for a general rule; Every young plant, if he thrive, will recover any wound above the earth, by good dressing, although it be to the one half, and to his very heart. This short cutting at the remove, saves your plants from wind, and needs the less or no staking: I commend not lying or leaning of Trees against holds or stays, for it breeds obstruction of sap, and wounds incurable. All removing of Trees as great as your arm, or above, is dangerous; though some time such will grow, but not continue long, because they be tainted with deadly wounds, either in the root or top, (and a Tree once thorowly tainted, is never good.) And though they get some hold in the earth with some lesser taw or taws, which give some nourishment to the body of the Tree, yet the heart being tainted, he will hardly ever thrive; which you may easily discern by the blackness of the boughs at the heart, when you dress you trees. Also, when he is set with more tops than the Roots can nourish; the tops decaying, blacken the boughs, and the boughs the arms, and so they boyl at the very heart. Or this taint in the removal, if it kill not presently, but after some short time, it may be discerned, black, or yellowness in the bark, and a small hungred leaf. Or if your removed plant put forth leaves the next and second Summer, and little or few sprases, is a great sign of a taint, and next years death. I have known a Tree tainted in setting, yet grow, and bear blossoms for divers years; and yet for want of strength could never shape his fruit.

General rule.

Tying of trees.

General rule.

Signs of diseases, chap. 13.

Next unto this, or rather equal with these plants, are suckers growing out of the Roots of great Trees, which Cherries and Plums

Suckers goodness.

Plums do ſeldome or never want, and being taken kindly with their Roots, will make very good ſets. And you may help them much by enlarging their Roots with the taws of the tree, whence you take them. They are of two ſorts; either growing from the very Root of the Tree: and here you muſt be carefull, not to hurt your Tree when you gather them, by Ripping amongſt the Roots, and that you take them clean away; for theſe are a great and continual annoyance to the growth of your Tree, and they will hardly be cleanſed. Secondly, or they do ariſe from ſome taw: and theſe may be taken without danger, with long and good Roots, and will ſoon become Trees of ſtrength.

A Running plant.

There is another way, which I have not thorowly proved, to get not onely plants for graffing, but Sets to remain for Trees, which I call a *Running plant*, the manner of it is this: Take a Root or kirnel, and put into the middle of your plot; and the ſecond year in the ſpring, geld his top, if he have one principal, (as commonly by nature they have) and let him put forth only four Syons toward the four corners of the Orchard, as near the earth as you can. If he put not four (which is rare) ſtay his top till he have put ſo many. When you have four ſuch, cut the ſtock aſlope, as is aforeſaid in this Chapter, hard above the uppermoſt ſprig, and keep thoſe four without Syons clean and ſtreight till you have them a yard and a half, at leaſt, or two yards long. Then the next ſpring, in graffing time, lay down thoſe four ſprays, towards the four corners of your Orchard, with their tops in a heap of pure and good earth, and raiſed as high as the Root of your Syon, (for ſap will not deſcend) and a ſod to keep them down, leaving nine or twelve inches of the top to look upward. In that hill he will put Roots, and his top new Syons, which you muſt ſpread as before, and ſo from hill to hill, till he ſpread the compaſs of your ground, or as far as you Liſt. If in bending the Syons crack, the matter is ſmall; cleanſe the ground, and he will recover. Every bended bough will put forth branches, and become Trees. If this plant be of a bur knot, there is no doubt: I have proved it in one branch my ſelf, and I know at *Wilton* in *Cleveland*, a Pear-Tree of a great bulk and age, blown cloſe to the earth, hath put at every knot Roots into the earth, and from Root to top, a great number of mighty arms or Trees, filling a great Room, like many Trees, or

a

a little Orchard; much better may it be done by Art, in a less Tree. And I could not mislike this kind, save that time will be long before it come to perfection.

Many use to buy sets already grafted, which is not the best way: for first, all removes are dangerous: Again, there is danger in the carriage: Thirdly, it is a costly course of planting: Fourthly, every Gardner is not trusty to sell you good fruit: Fifthly, you know not which is best, which is worst, and so may take most care about your worst Trees. Lastly, this way keeps you from practise, and so from experinece, in so Good, Gentlemanly, Scholar-like, and profitable a faculty. Sets bought.

The onely best way (in my opinion) to have sure and lasting sets, is never to remove: for every remove is a hinderance, if not a dangerous hurt, or deadly taint. This is the way: The platform being laid, and the plot appointed where you will plant every Set in your Orchard, dig the room where your Set shall stand, a yard compass, and make the earth mellow and clean, and mingle it with a few cole-ashes, to avoid worms, and immediatly after the first change of the Moon, in the latter end of *February*, the earth being afresh turned over, put in every such room three or four kirnels of Apples or Pears of the best; every kirnel in an hole made with your finger, finger-deep, a foot distant one from another, and that day month following, as many more, (least some of the former miss) in the same compass, but not in the same holes. Hence (God willing) shall you have roots enough: If they all, or divers of them come up, you may draw, (but not dig) up (nor put down) at your pleasure, the next *November*. How many soever you take away, to give or bestow elsewhere, be sure to leave two of the proudest. And when in your second or third year you graff, if you graff then at all, leave the one of those two ungraffed, lest in graffing the other, you fail. For I find by tryal, that after the first or second graffing in the same stock, being mist (for who hits all) the third mess puts your stock in deadly danger, for want of issue of sap. Yea, though you hit in graffing, yet may your graffs with wind or otherwise be broken down. If your graffs or graff prosper, you have your desire, in a plant unremoved, without taint, and the fruit at your own choice: and so you may, (some little earth being removed) pull but not dig The best Sets. Unremoved how.

up

up the other plant or plants in that room. If your graff or stock, or both perish, you have another in the same place, of better strength to work upon, for thriving without snub, he will overlay your grafted stock much. And it is hardly possible to miss in grafting so often, if your Gardiner be worth his name.

Sets ungrafted best of all.

It shall not be amiss, (as I judge it) if your kernels be of choice fruit, and that you see them come forward proudly in their body, and bear a fair and broad leaf in colour, tending to a greenish yellow, (which argues pleasant and great fruit) to try some of them ungrafted: for although it be a long time ere this come to bear fruit, ten or twelve years, or more; and at their first bearing, the fruit will not seem to be like his own kind, yet am I assured, upon Tryal, before twenty years growth, such Trees will increase the bigness and goodness of their fruit, and come perfectly to their own kind. Trees (like other breeding creatures)as they grow in years, bigness, and strength, so they mend their fruit. Husbands and Housewives find this true by experience, in the Rearing of their young store. More than this, there is no Tree like this for soundness, and durable last, if his keeping and dressing be answerable. I grant, the readiest way to come soon to fruit, is grafting; because, in a manner, all your graffs are taken off fruit-bearing Trees.

Time of removing.

Now when you have made choice of your sets to remove, the ground being ready, the best time is, immediately after the fall of the Leaf, in or about the change of the Moon, when the sap is most quiet, for then the sap is turning; for it makes no stay, but in the extremity of drought or cold: At any time in winter, may you transplant Trees, so you put no ice nor snow to the Root of your plant in the setting: and therefore open, calm, and moist weather is best. To remove, the Leaf being ready to fall, and not fallen, or buds apparently put forth in a moist warm season, for need, sometime may do well; but the safest is to walk in the plain trodden path.

General rule.

Some hold Opinion, that it is best removing before the fall of the Leaf, and I hear it is commonly practised in the South by our best Arborists, the leaf not fallen, & they give the reason to be, that the descending of the sap will make speedy Roots. But mark the Reasons following, and I think you shall find no soundness either in

in that position or practice, at least in the reason.

1. I say it is dangerous to remove when the sap is not quiet; for every remove gives a main check to the stirring sap, by staying the course thereof in the body of your plant, as may appear by trees removed any time in Summer, they commonly dye, nay, hardly shall you save the life of the most young and tender plant of any kind of wood (scarcely hearbs) if you remove them in the pride of sap; for proud sap universally stayed by removal, ever hinders, often taints, and so presently, or in very short time, kills. Sap is like blood in mans body, in which is the life, Chap. 3. page 9. If the blood universally be cold, life is excluded: so is sap tainted by untimely removal. A stay by drought, or cold, is not so dangerous, (though dangerous, if it be extream) because more natural.

2. The sap never descends, as men suppose; but is consolidated and transubstantiated into the substance of the tree, and passeth (alwaies above the earth) upward, not only betwixt the bark and the wood, but also into and in both body and bark, though not so plentifully, as may appear by a tree budding, nay, fructifying two or three years, after he be circumcised, at the very root, like a River that enlargeth his channel by a continual descent.

3. I cannot perceive what time they would have the sap to descend. At *Midsummer* in a biting drought it stays, but descends not; for immediately upon moisture it makes second shoots, at (or before rather) *Michaelside*, when it shapens his buds for next years fruit. If at the fall of the leaf, I grant, about that time is the greatest stand, but no descent of sap, which begins somewhat before the leaf fall, but not long; therefore at that time must be the best removing, not by reason of descent, but stay of sap.

4. The sap in this course hath its profitable and apparent effects; as the growth of the tree, covering of wounds, putting of buds, &c. Whereupon it follows, if the sap descend, it must needs have some effect to shew it.

5. Lastly, boughs plasht and laid lower than the root, dye for want of sap descending, except where it is forced by the main stream of the sap, as in top boughs hanging like water in pipes, or except the plasht boughs lying on the ground put roots of his own; yea, under boughs, which we commonly call water-boughs,

can ſcarcely get ſap to live, yea, in time dye, becauſe the ſap doth preſs ſo violently upward, and therefore the faireſt ſhoots and fruits are alwaies in the top.

Remove ſoon. *Object.* If you ſay that many ſo removed thrive; I ſay, that ſomewhat before the fall of the leaf (but not much) is the ſtand; for the fall and the ſtand are not at one inſtant; before the ſtand, is dangerous. But to return.

The ſooner in Winter you remove your ſets, the better; the latter, the worſe; for it is very perillous if a ſtrong draught take your ſets before they have made good their Rooting. A plant ſet at the fall, ſhall gain (in a manner) a whole years growth of that which is ſet in the ſpring after.

The manner of ſetting. I uſe in the ſetting to be ſure that the earth be mouldy, (and ſomewhat moiſt) that it may run among the ſmall tangles without ſtraining or bruiſing; and as I fill in earth to his Root, I ſhake the Set eaſily too and fro, to make the earth ſettle the better to his Roots; and withall eaſily with my foot I put in the earth cloſe; for Air is noyſome, and concavities will follow. Some preſcribe Oats to be put in with the earth: I could like it, if I could know any Reaſon thereof. And they uſe to ſet their plants with the ſame ſide towards the Sun; but this conceit is like the other. For firſt, I would have every tree to ſtand ſo free from ſhade, that not onely the Root (which therefore you muſt keep bare from graſs) but body, boughs, and branches, and every ſpray, may have the benefit of the Sun. And what hurt, if that part of the tree which before was ſhadowed, be now made partakers of the heat of the Sun? In turning of Bees, I know it is hurtfull, becauſe it changeth their entrance, paſſage, and whole work, but not ſo in trees.

Set in the cruſt. Set as deep as you can, ſo that in any wiſe you go not beneath the cruſt. Look Chap. 2.

Moiſture good. We ſpake in the ſecond Chapter of moiſture in general; but now eſpecially having put your removed plant into the earth, powr on water (of a puddle were good) by diſtilling preſently, and ſo every week twice, in ſtrong drought, ſo long as the earth will drink, and refuſe by over-flowing. For moiſture mollifies, and both gives leave to the Root to ſpread, and makes the earth yield ſap and nouriſhment with plenty and facility. Nurſes, they

(they say) give best and most milk after warm drinks.

If your ground be such, that it will keep no moisture at the Root of your plant, such plants shall never like, or but for a time. There is nothing more hurtfull for young trees, then piercing drought. I have known trees of good stature, after they have been of divers years growth, and thrive well for a good time, perish for want of water, and very many by reason of taints in setting.

It is meet your sets and grafts be fenced, till they be as big as your arm, for fear of annoyances. Many wayes may Sets receive damages, after they be set, whether grafted or ungrafted. For although we suppose, that no noysome beast or other thing must have access among your trees; yet by casualty, a Dog, Cat, or such like, or your self, or negligent friend bearing you Company, or a shrewd boy, may tread or fall upon a young and tender plant or graft. To avoid these and many such chances, you must stake them round a pretty distance from the Set, neither so neer nor so thick, but that it may have the benefit of the Sun, Rain, and Air. Your stakes (small or great) would be so surely put, or driven into the earth, that they break not, if any thing happen to lean upon them, else may the fall be more hurtfull then the want of the fence. Let not your stakes shelter any weeds about your Sets; for want of Sun is a great hinderance. Let them stand so far off, that your grafts spreading receive no hurt, either by rubbing on them, or of any other thing passing by. If your stock be long, and high grafted, (which I must discommend, (except in need) because there the sap is weak, and they are subject to strong winds, and the lightings of birds,) tie easily with a soft list three or four pricks, under the clay, and let their tops stand above the grafts to avoid the lighting of Crows, Pies, &c. upon your grafts. If you stick some sharp thorns at the Root of your stalks, they will make hurtfull things keep off the better. Other better fences for your grafts I know none. And thus much for sets and setting.

Grafts must be fenced.

CHAP. VIII.

Of the distance of Trees.

I Know not to what end you should provide good ground, well fenced, and plant good sets, and when your trees should come

to profit, have all your labours loſt, for want of due regard to the diſtance of placing your trees. I have ſeen many trees ſtand ſo thick, that one could not thrive for the throng of his neighbours. If you do mark it, you ſhall ſee the tops of trees rubbed off, their ſide galled like a gall'd horſe back; and many trees have more ſtumps than boughs, and moſt trees not well thriving, but ſhort, ſtumpiſh, and evil thriving boughs; like a Corn-field over-ſeeded, or a Town over-peopled, or a paſture over-laid; which the Gardner muſt either let grow, or leave the tree very few boughs to bear fruit. Hence ſmall thrift, galls, wounds, diſeaſes, and ſhort life to the trees; and, while they live, green, little, hard, worm-eaten, and evil thriving fruit ariſe, to the diſcomfort of the owners.

Hurts of too neer planting.

To prevent which diſcommodity, one of the beſt remedies is, the ſufficient and fit diſtance of trees. Therefore at the ſetting of your plants, you muſt have ſuch reſpect, that the diſtance of them be ſuch that every tree be not annoyance, but an help to his fellows; for trees (as all other things of the ſame kind) ſhould ſhroud, and not hurt one another. And aſſure your ſelf, that every touch of trees (as well under as above) is hurtfull: Therefore this muſt be a general rule in this Art, that no tree in an Orchard well ordered, or no bough, nor cyon, drop upon or touch his fellows. Let no man think this impoſſible, but look in the eleventh Chapter of dreſſing of trees. If they touch, the wind will cauſe a forcible rub. Young twigs are tender, if boughs or arms touch or rub, if they are ſtrong, they make great galls. No kind of touch therefore in trees can be good.

General rule. All touches hurtful.

Now it is to be conſidered what diſtance among Sets is requiſite, and that muſt be gathered from the compaſs and room that each tree by probability will take and fill. And herein I am of a contrary opinion to all them which practice or teach the planting of trees, that ever yet I knew, read, or heard of: for the common ſpace between tree and tree, is ten foot; if twenty foot, it is thought very much. But I ſuppoſe twenty yards diſtance is ſmall enough betwixt tree and tree, or rather too too little. For the diſtance muſt needs be as far as two trees are well able to overſpread and fill, ſo they touch not by one yard at the leaſt. Now I am aſſured, and I know one Apple-tree, ſet of a ſlip *finger great*, in

The beſt diſtance of trees.

in the ſpace of twenty years (which I account a very ſmall part of a trees age, as is ſhewed Chapter 14.) hath ſpread his boughs eleven or twelve yards compaſs; that is, five or ſix yards on every ſide. Hence I gather, that in forty or fifty years, (which yet is but a ſmall time of his age) a tree in good ſoyl, well liking, by good dreſſing (for that is much available to this purpoſe) will ſpread double at the leaſt, viz. twelve yards on a ſide; which being added to twelve allotted to his fellow make twenty and four yards, and ſo far diſtant muſt every tree ſtand from another. And look how far a tree ſpreads his boughs above, ſo far doth he put his roots under the earth, or rather further, if there be no ſtop nor let by walls, trees, rocks, barren earth, and ſuch like: for an huge bulk, and ſtrong armes, maſſie boughs, many branches, and infinite twigs, re- The parts of a quire wide ſpreading Roots. The top hath the vaſt air to Tree. ſpread his boughs in, high and low, this way and that way; but the Roots are kept in the cruſt of the earth, they may not go downward, nor upward out of the earth, which is their Element, no more than the Fiſh out of the water, Camelion out of the air, nor Salamander out of the fire. Therefore they muſt needs ſpread far under the earth. And I dare well ſay, If nature would give leave to man, by Art to dreſs the Roots of Trees, to take away the taws, and tangles that lap and fret, and grow ſuperfluouſly and diſorderly, (for every thing *ſublunary* is curſed for man's ſake) the tops above being anſwerably dreſſed, we ſhould have trees of wonderfull greatneſs, and infinite durance. And I perſwade my ſelf that this might be done ſometimes in Winter, to trees ſtanding in fair plains and kindly earth, with ſmall or no danger at all. So that I conclude, that twenty four yards is the leaſt ſpace that Art can allow for trees to ſtand diſtant one from another.

If you ask me what uſe ſhall be made of that waſte ground Waſt grounds betwixt tree and tree: I anſwer, if you pleaſe to plant ſome in an Orchard. tree or trees in that middle ſpace, you may; and as your trees grow contiguous, great and thick, you may at your pleaſure take up thoſe laſt trees. And this I take to be the chief cauſe why the moſt trees ſtand ſo thick; for men not knowing (or not regarding) this ſecret of needfull diſtance, and loving

fruit

fruit of trees planted to their hands, think much to pull up any, though they pine one another. If you or your heirs or successors would take up some great trees (past setting) where they stand too thick, be sure to do it about *Midsomer*, and leave no main Roots. I destinate the space of four and twenty yards, for trees of age and stature. More then this, you have borders to be made for walks, with Roses, Berries, &c.

And chiefly consider, that your Orchard, for the first twenty or thirty years, will serve you for many Gardens; for Saffron, Licoras, Roots, and other herbs for profit, and flowers for pleasure: so that no ground need be wasted if the Gardiner be skilfull and diligent. But be sure you come not neer with such deep delving the Roots of your Trees, whose compass you may partly discern, by the compass of the tops, if your top be well spread. And under the droppings and shadow of your Trees, be sure no herbs will like. Let this be said for the distance of Trees.

CHAP. IX.

Of the placing of Trees.

THe placing of Trees in an Orchards is well worth the regard: For although it must be granted, that any of our foresaid Trees (Chap. 2.) will like well in any part of your Orchard, being good and well drest earth; yet are not all Trees alike worthy of a good place. And therefore I wish that your Fibert, Plums, Damsons, Bulless, and such like, be utterly removed from the plain soyl of your Orchard into your fence: for there is not such fertility and easefull growth, as within: and there also they are more subject to, & can abide the blasts of *Æolus*. The Cherries and Plums being ripe in the hot time of Summer, and the rest standing longer, are not so soon shaken as your better fruit, neither, if they suffer loss, is your loss so great. Besides that, your fences and ditches will devour some of your fruit growing in, or neer your hedges. And seeing the continuance of all these (except Nuts) is small, the care of them ought to be the less. And make no doubt, but the fences of a large Orchard will contain a sufficient number of such kind of Fruit-Trees in the whole compass. It is not material, but at your pleasure, in the said fences, you may either intermingle your

your ſeveral kinds of fruit trees, or ſet every kind by it ſelf, order doth very well become your better and greater fruit. Let therfore your Apples, Pears, and Quinces, poſſeſs the ſoyl of your Orchard, unleſs you be eſpecially affected to ſome of your other kinds; and of them, let your greateſt trees of growth ſtand further from Sun, and your Quinces at the South ſide or end, and your Apples in the middle: ſo ſhall none be any hindrance to his fellows. The warden-tree, and Winter-pear, will challenge the preeminence for ſtature. Of your Apple-trees, you ſhall find a difference in growth. A good Pippin will grow large, and a Coſtard tree: ſtead them on the North ſide of your other Apples; thus being placed, the leaſt will give Sun to the reſt, and the greateſt will ſhroud their fellows. The Fences and out-trees will guard all.

CHAP. X.

Of Graffing.

NOw are we come to the moſt curious point of our facul- ty, curious in conceit, but indeed as plain and eaſie as the reſt, when it is plainly ſhewn, which we commonly call Graf- Of Graving or Carving.

ſing

Grafting what. fing or (after ſome) Grafting, I cannot Etymologize or ſhew the original of the Word, except it come of Graving or Carving.

But the thing or matter is: The reforming of the fruit of one tree with the fruit of another, by an artificial tranſplacing or tranſpoſing of a twigg, bud, or leaf, (commonly called a Graft) taken from one tree of the ſame, or ſome other kind, and placed or put to, or into another tree in one time and manner.

A Graff.

Kinds of grafting. Of this there be divers kinds, but three or four now eſpecially in uſe: to wit, Grafting, inciſing, packing on, grafting in the ſcutchion, or inoculating; whereof the chief and moſt uſual is called Grafting, by the general name, *Catexochen*:) for it is the moſt known, ſureſt, readieſt, and plaineſt way to have ſtore of good fruit.

Graft how. It is thus wrought; You muſt with a fine, thin, ſtrong, and ſharp Saw, made and armed for that purpoſe, cut off a foot above the ground, or thereabouts, in a plain without a knot, or as near as you can without a knot (for ſome ſtocks will be knotty) your Stock, ſet, or plant being ſurely ſtayed with your foot and legg; or otherwiſe ſtraight overthwart (for the Stock may be crooked) and then plain his wound ſmoothly with a ſharp knife: that done, cleave him gently in the middle with a cleaver, and a knock or mall, and with a wedge of Wood, Iron, or Bone, two handfull long at leaſt, put in the middle of that clift, with the ſame knock, make the wound gape a ſtraw-breadth wide into which you muſt put your Graffs.

A graft what. The graft is a top twig taken from ſome other tree (for it is a folly to put a graff into his own ſtock) beneath the uppermoſt (and ſometimes in need, the ſecond) knot, and with a ſharp knife fitted in the knot (and ſometimes out of the knot when need is) with ſhoulders an inch downward, and ſo put into the ſtock with ſome thruſting (but not ſtraining) bark to bark inward.

Eyes. Let your graff have three or four eyes for readineſs to put forth, and give iſſue to the ſap. It is not amiſs to cut off the top of your graff, and leave it but five or ſix inches long, becauſe commonly you ſhall ſee the tops of long graffs dye. The reaſon is this, the ſap in graffing receives a rebuke, and cannot work ſo ſtrongly preſently,

ſently, and your graffs receive not ſap ſo readily, as the natural branches. When your graffs are cleanly and cloſely put in, & your wedge pull'd out nimbly, for fear of putting your graffs out of frame, take well tempered morter, ſoundly wrought with chaff, or horſe-dung, (for the dung of Cattel will grow hard, and ſtrain your graffs) the quantity of a Gooſe egge, and divide it Juſt, and therewithall cover your ſtock, laying the one half on the one ſide, and the other half on the other ſide of your graffs, (leſt thruſting again your graffs you move them) and let both your hands thruſt at once, and alike, and let your clay be tender, to yield eaſily; and all, leſt you move your graffs. Some uſe to cover the cleft of the ſtock, under the clay, with a Piece of bark or leaf, ſome with a ſear-cloath of wax and butter, which as they be not much needfull, ſo they hurt not, unleſs that by being buſie about them, you move your graffs from their places. They uſe alſo moſs, tyed on above the clay with ſome bryar, wicker, or other bands: Theſe profit nothing. They all put the graffs in danger, with pulling and thruſting: for I hold this general Rule in graffing, and planting; if your ſtock and graffs take, and thrive, (for ſome will take and not thrive, being tainted by ſome means in the planting, or graffing) they will (without doubt) recover their wounds ſafely and ſhortly. General rule.

The beſt time of graffing, from the time of removing your ſtock, is the next Spring, for that ſaves a ſecond wound, and a ſecond repulſe of ſap, if your ſtock be of ſufficient bigneſs to take a graff from as big as your thumb, to as big as an arm of a man. You may graff leſs, (which I like) and bigger, which I like not ſo well. The beſt time of the year is in the laſt part of *February*, or *March*, or beginning of *April*, when the Sun with his heat begins to make the ſap ſtir more Rankly about the change of the Moon, before you ſee any great apparency of leaf or flowers, but onely knots and buds, and before they be proud, though it be ſooner: Cherries, Pears, Apricocks, Quinces, and Plums, would be gathered and grafted ſooner. Time of graffing.

The graffs may be gathered ſooner in *February*, or any time within a month or two before you graff, or upon the ſame day (which I commend) if you get them any time before: for I Gathering of graffs.

have known graffs gathered in *December*, and do well, take heed of drought; I have my self taken a burk, not of a Tree, and the same day when he was laid in the earth about mid *February*, gathered grafts and put in him, and one of those graffs bore the third year after, and the fourth plentifully; Graffs of old Trees would be gathered sooner then of young Trees, for they sooner break and bud. If you keep graffs in the earth, moisture with the heat of the Sun will make them sprout as fast, as if they were growing on the Tree. And therefore, seeing keeping is dangerous, the surest way (as I judge) is, to take them within a week of the time of your grafting.

Graffs of old trees.

The grafts would be taken not of the proudest twigs, for it may be your stock is not answerable in strength. And therefore (say I) the grafts brought from South to us in the North, although they take and thrive, (which is somewhat doutfull, by reason of the difference of the clime and carriage) yet shall they in time fashion themselves to our cold Northern soil, in growth, taste, &c.

Where taken.

Nor of the poorest; for want of strength may make them unready to receive sap, (and who can tell but a poor graft is tainted) nor on the outside of your Tree, for where should your Tree spread, but in the middest: for there you may be sure your Tree is no whit hindered in his growth or form. He will still recover inward, more than you would wish. If your clay clift in Summer with drought, look well in the Chinkes for Emmets, and Earwigs, for they are cunning and close theeves, about grafts; you shall find them stirring in the morning and evening, and the rather in the moist weather: I have had many young buds of Graffs, even in the flourishing, eaten with Ants. Let this suffice for graffing, which is in the faculty counted the chief secret, and because it is most usuall, it is best known.

Emmets.

Graffs are not to be disliked for growth, till they wither, pine, and die. Usually before *Midsummer* they break, if they live. Some (but few) keeping proud and green, will not put till the second year, so is it to be thought of Sets.

The first shew of putting is no sure sign of growth, it is but the sap the graff brought with him from his Tree.

So soon as you see the graft put forth growth, take away the clay, for then doth neither the stock nor the graft need it, (put a little

little fresh well tempered clay in the hole of the stock) for the clay is now tender, and rather keeps moisture then drought.

The other wayes of changing the natural fruit of Trees, are more curious then profitable, and therefore I mind not to bestow ~~much labour or time about them, only~~ I shall make known what I ~~have proved, and what I do think.~~

And first, of Incising, which is the cutting of the back of the boal, a Rine or branch of a Tree at some bending, or knee shoulderwise with two gashes, onely with a sharp knife to the wood; then take a wedge, the bigness of your graff, sharp ended, flat on the one side, agreeing with the Tree, and round on the other side, and with that being thrust in, raise your bark, then put in your graff, fashioned like your wedge just: and lastly, cover your wound, and fast it up, and take heed of straining. This will grow but to small purpose, for it is weak hold, and lightly it will be under growth. Thus may you graft betwixt the bark and the Tree of a great stock, that will not easily be clifted. But I have tryed a better way for great trees, *viz.* First, cut him off straight, and cleanse him with your knife; then cleave him into four quarters equally with a strong cleaver: then take for every clift, two or three small (but hard) wedges, just of the bigness of your grafts, and with those wedges driven in with a hammer, open the four clifts so wide, (but no wider) that they may take your four graffs with thrusting, not with straining: And lastly, cover and clay it closely, and this is a sure and good way of grafting: or thus, clift your stock by his edges twice or thrice with your cleaver, and open him with your wedge in every clift one by one, and put in your graffs, and then cover them: This may do well.

Incising.

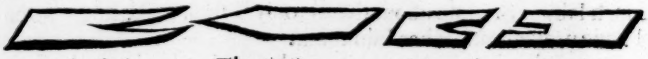
A great stock.

Packing on, is, when you cut aslope, a twig of the same bigness with your graft, either in or besides the knot, two inches long, and make your graft agree jump with the cyon, and gash your graft and your cyon in the middest of the wound, length-way, a straw breadth deep, and thrust the one into the other, wound to wound, sap to sap, bark to bark, then tye them close, and clay them: This may do well. The fairest graft I have in my little Orchard, which I have planted, is thus packt on, and the branch whereon I put him, is in his plentiful Root.

Packing thus.

To be short in this point, cut your graft in any sort or fashion

two inches long, and joyn him cleanly, and close to any other sprig of any Tree in the latter end of the time of grafting, when sap is somewhat rise, and in all probability, they will close and thrive: thus;



The sprig. The graft. The twig. The graft.

Or any other fashion you think good.

Innoculating.

Innoculating is an eye, or bud, taken bark and all from one Tree, and placed in the room of another eye or bud of another; cut both of one compass, and their bound. This must be done in Summer, when the sap is proud.

Grafting in Scutchion.

Much like unto this, is, that they call grafting in the scutchion, they differ thus: That here you must take an eye with his leaf, or (in mine opinion) a bud with his leaves. (Note that an eye is for a cyon, a bud is for flowers and fruit) and place them on another Tree, in a plain, (for they so teach) the place, or bark, where you must set it, must be thus cut with a sharp knife, and the bark raised with a wedge, and then the eye or bud put in, and so bound up, I cannot deny but such may grow. And your bud if he take will flower, and bear fruit in that year; as some grafts, and sets also, being set for blooms. If these two kinds thrive, they reform but a spray, and an under growth: Thus you may place Roses, or Thorns, and Cherries on Apples, and such like. Many write much more of grafting, but to small purpose; whom we leave to themselves, and their followers, and ending this secret, we come in the next Chapter to a point of knowledge, most requisite in an Arborist, as well for all other Woods, as for an Orchard.

CHAP. II.

Of the right dressing of Trees.

Necessity of dressing trees.

IF all these things aforesaid were indeed performed, as we have shewed them in words, you should have a perfect Orchard, nature and substance, begun to your hand: And yet are all these things nothing, if you want that skill to keep and dress your Trees. Such is the condition of all earthly things, whereby a man receiveth profit, or pleasure, that they degenerate present-

ly

ly without good ordering. Man himself, left to himself, grows from his heavenly and spiritual generation, and becommeth beastly, yea, devilish to his own kind, unless he be regenerate. No marvel then, if Trees make their shoots, and put their sprays disorderly. And truly, (if I were worthy to judge) there is not a mischief that breedeth greater and more general harm to all the Orchard, (especially, if they be of any continuance) that ever I saw, (I will not except three) then the want of the skilful dressing of trees. It is a common, and unskilful opinion, and saying, Let all grow, and they will bear more fruit: and if thou lop away superfluous boughs, they say, what a pitty is this? how many Apples would these have born? not considering, there may arise hurt to your Orchard, as well (nay, rather) by abundance, as by want of wood. Sound and thriving plants in a good soil will ever yield too much wood, and disorderly, but never too little: So that a skilful and painful Arborist need never want matter to effect a plentiful and well drest Orchard; for it is an easie matter to take away superfluous boughs, (if your Gardner have skill to know them) whereof your plants will yield abundance, and skill will leave sufficiently well ordered. All ages, both by rule and experience, do consent to a pruning and lopping of Trees: yet have not any that I know described unto us, (except in dark and general words) what, or which, are those superfluous boughes, which we must take away, and that is the chief and most needful point to be known in lopping. And we may well assure our selves, (as in all other Arts, so in this) there is a vantage and dexterity in skill, and an habit by practice out of experience, in the performance hereof, for the profit of mankind; yet do not I know (let me speak it with the patience of our cunning Arborists) any thing within the compass of human affairs so necessary, and so little regarded, not onely in Orchards, but also in all other Timber-trees, where, or whatsoever.

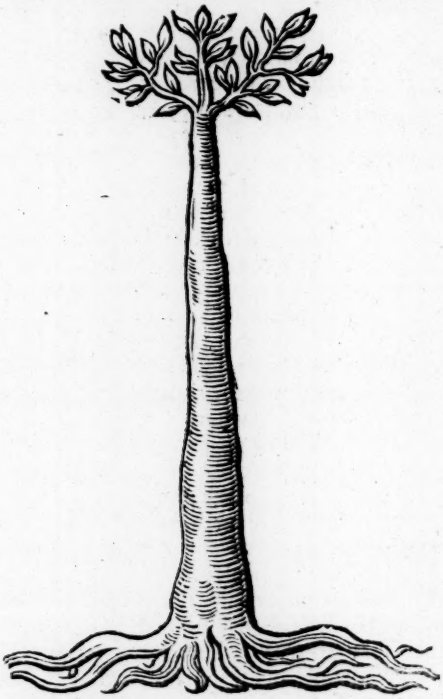
General rule.

How many forrests, and woods, wherein you shall have for one lively thriving Tree, four (nay, sometimes twenty four) evil thriving, Rotten, and dying Trees, even while they live? and in stead of trees, thousands of bushes and shrubs? What rottenness, what hollowness, what dead arms, withered tops, curtalled trunks? what loads of mosses, drooping boughs, and dying branch-

Timber-wood evil drest.

branches you ſhall ſee every where? And thoſe that are like in this ſort, are in a manner all unprofitable boughs, cankered arms, crooked, little and ſhort boals; what an infinite number of buſhes, ſhrubs, and skrogs of hazels, thorns, and other profitable wood, which might be brought by dreſſing to become great and goodly trees? Conſider now the cauſe: The leſſer wood hath been

The cauſe of hurts in woods.



Imagine the Root to be ſpread far wider.

ſpoyled with careleſs, unskilful, and untimely ſtowing, and much alſo of the great wood. The greater trees at the firſt riſing have filled, and over-laden themſelves with a number of waſtfull boughs

boughs and ſuckers, which have not only drawn the ſap from the boal, but alſo have made it knotty, and themſelves and the boal moſſie for want of dreſſing, whereas, if in the prime of growth they had been taken away cloſe, all but one top, (according to this pattern) and clean by the bulk, the ſtrength of all the ſap ſhould have gone to the bulk, and ſo he would have recovered, and covered his knots, and have put forth a fair, long, and ſtraight body, (as you ſee) for timber profitable, huge, great of bulk, and of infinite laſt. Dreſs timber trees, how.

If all Timber Trees were ſuch, (will ſome ſay) how ſhould we have crooked wood for wheels, &c?

Anſw. Dreſs all you can, and there will be enough crooked for thoſe uſes.

More then this, in moſt places, they grow ſo thick, that neither themſelves, nor earth, nor any thing under or neer them can thrive, nor Sun, nor Rain, nor Air can do them, nor any thing neer or under them, any profit or comfort.

I ſee a number of Hags, where, out of one Root you ſhall ſee three or four, (nay more, ſuch is mens unskilful greedineſs, who deſiring many, have none good) pretty Oaks, or Aſhes, ſtraight and tall, becauſe the Root at the firſt ſhoot gives ſap amain: but if one onely of them might be ſuffered to grow, and that well and cleanly pruned, all to his very Top, what a Tree ſhould we have in time? And we ſee by thoſe Roots, continually and plentifully ſpringing, notwithſtanding ſo deadly wounded, what a commodity ſhould ariſe to the owner, and the Commonwealth, if wood were cheriſhed, and orderly dreſſed.

The waſte boughs cloſely and skilfully taken away, would give us ſtore of fences and fuel, and the bulk of the Tree in time would grow of huge length and bigneſs. But here (me-thinks) I hear an unskilful Arboriſt ſay, that Trees have their ſeveral forms, even by nature, the Pear, the Holly, the Aſpe, &c. grow long in bulk, with few and little arms, the Oak by nature broad, and ſuch like. All this I grant, but grant me alſo, that there is a profitable end and uſe of every Tree, from which if it decline, (though by nature) yet man by art may (nay, muſt) correct it. Now other end of Trees, I could never learn, then good Timber; fruit much and good, and pleaſure, uſes phyſical hinder nothing a good form. Profit of trees dreſſed. The end of trees.

Nei-

Trees will take any form.

Neither let any man ſo much as think, that it is unprofitable, much leſs unpoſſible, to reform any Tree of what kind ſoever: For (believe me) I have tryed it, I can bring any tree (beginning betimes) to any form. The Pear and Holly may be made to ſpread, and the Oak to cloſe.

But, why do I wander out of the compaſs of mine Orchard, into the Forreſts and Woods? Neither yet am I from my purpoſe, if boals of timber-trees ſtand in need of all the ſap, to make them great and ſtreight, (for ſtrong growth and dreſſing makes ſtrong trees) then it muſt be profitable for fruit, (a thing more immediatly ſerving a man's need) to have all the ſap his Root can yield: for as timber, ſound, great, and long, is the *good of Timber-trees*, and therefore they bear no fruit of worth: ſo fruit, good, ſound, pleaſant, great and much, is the fruit Trees end. That gardner therefore, ſhall perform his duty skilfully and faithfully, which ſhall ſo dreſs his Trees, that they may bear ſuch and ſuch ſtore of fruit, which he ſhall never do, (I dare undertake) unleſs he keep this Order in dreſſing his Trees.

The end of trees.

How to dreſs a fruit-tree.

A fruit Tree ſo ſtanding, that there need none other end of dreſſing but fruit, (not Ornaments, nor walks, nor delight to ſuch as would pleaſe their eye only, and yet the beſt form cannot but both adorn and delight) muſt be parted from within two foot or thereabouts of the earth, ſo high to give liberty to dreſs his Root, and no higher, for drinking up the ſap that ſhould feed his fruit, for the boal will be firſt, and beſt ſerved and fed, becauſe he's next the Root, and of greateſt wax and ſubſtance, and that makes him longeſt of Life, into two, three, or four arms, as your ſtock or graffs yield twigs, and every arm into two or more branches, and every branch into his ſeveral cyons, ſtill ſpreading by equal degrees, ſo that his loweſt ſpray be hardly without the reach of a man's hands, and his higheſt be not paſt two yards higher, rarely, (eſpecially in the middeſt) that no one twig touch his fellow. Let him ſpread as far as he liſt, without his matter-bough, or lop equally. And when any bough doth grow ſadder, and fall lower then his fellows, (as they will with weight of fruit) eaſe him the next ſpring of his ſuperfluous twigs, and he will Riſe; when any bough or ſpray ſhall amount above the reſt, either ſnub his top with a nip betwixt

twixt your finger and your thumb, or with a ſharp knife, and take him clean away, and ſo you may uſe any Cyon you would reform; and as your tree grows in ſtature, and in ſtrength, ſo let him riſe with his tops but ſlowly, and early, eſpecially in the middeſt, and equally, and in breadth alſo; and follow him upward with lopping his under-growth and water boughs, keeping the ſame diſtance of two yards, but not above three in any wiſe, betwixt the loweſt and the higheſt twigs.

1. Thus you ſhall have well liking, clean-skind, healthfull, great, and long-laſting trees. Benefits of good dreſſing.

2. Thus ſhall your tree grow low, and ſafe from winds, for his top will be great, broad, and weighty. Remedy.

3. Thus growing broad, ſhall your trees bear much fruit (I dare ſay) one as much as ſix of your common trees, and good without ſhadowing, dropping and fretting; for his boughs, branches, and twigs ſhall be many, and thoſe are they (not the boal) which bear fruit.

4. Thus ſhall your boal being little (not ſmall, but low) by reaſon of his ſhortneſs, take little, and yield much ſap to fruit.

5. Thus your trees by reaſon of ſtrength in time of ſetting ſhall put forth more bloſſoms and more fruit, becauſe free from taints (for ſtrength is a great help to bring forth much) and ſafely, whereas weakneſs fails in ſetting, though the ſeaſon be calm.

Some uſe to bare trees Roots in Winter, to ſtay the ſetting till hotter ſeaſons, which I diſcommend, becauſe

1. They hurt the Roots.

2. It ſtays nothing at all.

3. Though it did, being ſmall, with us in the North they have their part of our *April* and *May* Froſts.

4. Hinderance cannot profit weak trees in ſetting.

5. They waſte much labour.

6. Thus ſhall your tree be eaſie to dreſs, and without danger, either to the tree or the dreſſer.

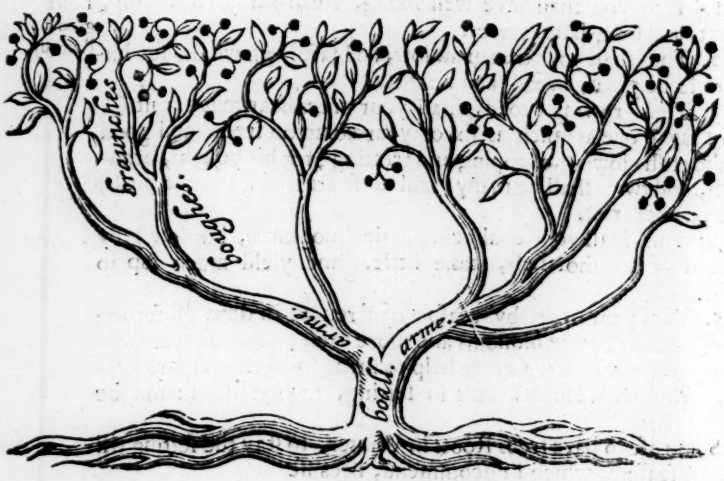
7. Thus may you ſafely and eaſily gather your fruit without falling, bruiſing, or breaking of Cyons.

This is the beſt form of a fruit-tree, which I have here ſhad-

dowed out for the better capacity of them that are led more with the eye, then the mind, craving pardon for the deformity, because I am nothing skilful either in the painting or carving.

Imagine that the paper makes but one side of the tree to appear, the whole round compass will give leave for many more arms, boughs, branches, and cyons.

The perfect form of a Fruit-tree.



If any tree cannot well be brought to this form: *Experto crede Roberto,* I can shew divers of them under twenty years of age.

Time best for Proyning.

The fittest time of the Moon for proyning, is, as of grafting, when the sap is ready to stir (not proudly stirring) and so to cover the wound: and of the year, a month before (or at least when) you graff. Dress Pears, Apricocks, Peaches, Cherries, and Bullis sooner. And old trees before young plants, you may dress at any time bewixt Leaf and Leaf. And note, where you take any thing away, the sap the next Summer will be putting: Be sure therefore when he puts a bud in any place where you would not have him, rub it off with your finger.

And

And here you must remember the common homely proverb : Dressing betime.

Soon crooks the tree
That good Camrel must be.

Begin betimes with trees, and do what you list: but if you let them grow great and stubborn, you must do as the tree list. They will not bend but break, nor be wound without danger. A small branch will become a bough, and a bough an arm in bigness. Then if you cut him, his wound will fester, and hardly without good skil recover: therefore, *Obsta principiis.* Of such wounds, and lesser, or any bough cut off a handfull or more from the body, comes hollowness, and untimely death. And therefore when you cut, strike close, and clean, and upward, and leave no bunch. Faults of evil dreſt trees, and the remedy.

This form in some cases sometimes may be altered: If your tree, or trees, stand neer your walks, if it please your fancy more, let him not break till his boal be above your head; so may you walk under your trees at your pleasure. Or if you set your fruit trees for your shades in your Groves, then I respect not the form of the tree, but the comlinesſ of the walk. The form altereth.

All this hitherto spoken of dressing, must be understood of young plants, to be formed: it is meet somewhat be said for the instruction of them that have old trees already formed, or rather deformed: for *Malum non vitatur nisi cognitum.* The faults therefore of a disordered tree, I find to be five. Dressing of old trees.

1. An unprofitable boal.
2. Water boughs.
3. Fretters.
4. Suckers. And,
5. One principal top.

Faults are five, and their remedies.

A long boal asketh much feeding, and the more he hath the more he desires, and gets, (as a drunken man drink, or a covetous man wealth,) and the less remains for the fruit; he puts his boughs into the air, and makes them, the fruit and it self more dangered with winds; for this I know no remedy, after that the tree is come to growth; once evil, never good. Long boal. No remedy.

Water boughs, or under growth, are such boughs as grow low under others, and are by them over-grown, over-shadowed, dropped on, and pin'd for want of plenty of sap, and by that 1. Water boughs.

means in time dye, for the ſap preſſeth upward: and it is like water in her courſe, where it findeth moſt iſſue, thither it floweth, leaving the other leſs ſluces dry, even as wealth to wealth, and much to more. Theſe ſo long as they bear, they bear leſs, worſe and fewer fruit, and wateriſh.

Remedy. The remedy is eaſie, if they be not grown greater than your arm, lop them cloſe and clean, and cover the middle of the wound; the next Summer when he is dry, with a ſalve made of tallow, tarr, and a very little pitch, good for the covering of any ſuch wound of a great tree: unleſs it be bark pild, and then a ſear cloth of freſh butter, honey and wax preſently (while the wound is green) applyed, is a ſoveraign remedy, in Summer eſpecially. Some bind ſuch wounds with a thumb Rope of hay, moiſt, and rub it with dung.

Bark pil'd, and the remedy.

Fretters. Fretters are, when as by negligence of the Gardner, two or more parts of the tree, or of divers trees, as arms, boughs, branches, or twigs, grow ſo near and cloſe together, that one of them by rubbing doth wound one another. This fault of all other ſhews the want of skill (or care at leaſt) in the arboriſt: for here the hurt is apparent, and the remedy eaſie, ſeen to betimes: galls are wounds incurable, but by taking away thoſe members; for let them grow, and they will be worſe and worſe, and ſo kill themſelves with civil ſtrife for Roomth, and danger the whole tree. Avoid them betime therefore, as a Common-wealth doth boſome enemies.

Touching.

Remedy.

Suckers. A Sucker is a long, proud, and diſorderly Cyon, growing ſtreight up (for price of ſap makes proud, long, and ſtreight growth) out of any lower parts of the tree, receiving a great part of the ſap, and bearing no fruit, till it have tyrannized over the whole tree. Theſe are like idle and great Drones amongſt Bees: and proud and idle members in a Common-Wealth.

The Remedy of this is, as of water boughs, unleſs they be grown greater than all the reſt of the boughs; and then your Gardner (at your diſcretion) may leave him for his boal, and take away all, or the moſt of the reſt. If he be little ſlip him, and ſet him, perhaps he will take: my faireſt Apple-tree was ſuch a ſlip.

One principal top or bough, and Remedy. One or two principal top boughs are as evil in a manner as ſuckers; they riſe of the ſame cauſe, and receive the ſame Remedy:

medy: yet these are more tolerable, because these bear fruit, yea, the best; but Suckers of long time do not bear

I know not how your tree should be faulty, if you reform all your vices timely, and orderly. As these Rules serve for dressing young trees, and sets in the first setting, so may they well serve to help old trees, though not exactly to cure them.

The instruments fittest for all these purposes, are most commonly, for the greatest trees, an handsome, long, light Ladder of Firpole, a little, nimble, and strong armed Saw, and sharp. For less trees, a little and sharp hatchet, a broad mouthed Chesel, strong and sharp, with an hand beetle, your strong and sharp Clever, with a knock, and (which is a most necessary instrument amongst little trees) a great hafted and sharp knife or whittle. And as needful is a Stool on the top of the Ladder of eight or more rungs, with two back feet, whereon you may safely, and easily stand to graff, to dress, and to gather fruit, thus formed. The feet may be fast wedged in, but the Ladder must hang loose with two bands of Iron: and thus much of dressing trees for fruit, formally to profit. Instruments for dressing.

CHAP. XII.

Of Soyling.

THere is one thing yet very necessary for to make your Orchard both better, and more lasting: Yea, so necessary, that without it your Orchard cannot last, nor prosper long, which is neglected generally both in precepts and in practice, *viz.* manuring with soyl: whereby it hapneth that when trees (amongst other evils) through want of fatness to feed them, become mossie, and in their growth are evil (or not thriving) it is either attributed to some wrong cause, as age (when indeed they are but young) or evil standing (stand they never so well) or such like, or else the cause is altogether unknown, and so not amended. Necessity of soyling.

Can there be devised any way by nature, or art, sooner or foundlier to suck out, and take away the heart of earth, then by great trees; such great bodies cannot be sustained without great store of sap? what living body have you greater then of trees? the great Sea monsters (whereof one came to land at *Teesemouth* Trees great Suckers.

in

in *Yorkshire*, hard by us, 18 yards in length, and near as much in compass) seem hideous, huge, strange, and monstrous, because they be indeed great, but especially, because they are seldome seen: but a tree liking, come to his growth and age, twice that length, and of a bulk never so great, besides his other parts, is not admired, because he is so commonly seen. And doubt not, but if he were well regarded from his kernel, by succeeding ages, to his full strength, the most of them would double their measure. About fifty years ago, I heard by credible and constant reports, That in *Brookham* Park in *Westmerland*, neer unto *Penrich*, there lay a blown Oak, whose trunk was so big, that two Horse-men being the one on the one side, and the other on the other side, they could not see one another; to which, if you add his arms, boughs, and roots, and consider of his bigness, what would he have been, if preserved to the vantage? Also I read in the History of the *West-Indians*, out of *Peter Martyr*, that sixteen men taking hands one with another, were notable to fathome one of those trees about. Now nature having given to such, a faculty by large and infinite Roots, taws and tangles, to draw immediately his sustenance from our common mother the earth (which is like in this point to all other mothers that bear) hath also ordained that the tree over-laden with fruit, and wanting sap to feed all she hath brought forth, will wain all she cannot feed, like women bringing forth more Children at once then she hath teats. See you not how trees especially, by kind being great, standing so thick and close, that they cannot get plenty of sap, pine away all the grass, weeds, lesser shrubs and trees, yea, and themselves also, for want of vigour of sap? so that trees growing large, sucking the soyl whereon they stand continually and amain, and the foizon of the earth that feeds them decaying (for what is there that wastes continually, that shall not have an end?) must either have supply of sucking, or else leave thriving and growing. Some grounds will bear corn while they be new, and no longer, because their crust is shallow, and not very good, and lying they scind and wash and become barren. The ordinary corn soyls continue not fertile, without fallowing and soyling, and the best requires supply even for the little body of corn. How then can we think that any

ny Ground, how good ſoever, can ſuſtain bodies of ſuch great- Great bodies.
neſs, and ſuch great feeding, without great plenty of ſap ariſing from good earth? This is one of the chief cauſes why ſo many of our Orchards in *England* are ſo evil thriving when they come to growth, and our fruit ſo bad. Men are loath to beſtow much ground, and deſire much fruit, and will neither ſet their trees in ſufficient compaſs, nor yet feed them with manure. Therefore of neceſſity Orchards muſt be ſoyled.

The fitteſt time is, when your trees are grown great, and have neer hand ſpread your earth, wanting new earth to ſuſtain them, which if they do, they will ſeek abroad for better earth; and ſhun that which is barren (if they find better) as cattel evil paſturing. For nature hath taught every creature to deſire and ſeek his own good, and to avoid hurt. The beſt time of the year is at the fall, that the froſt may bite and make it tender, and the Rain waſh it into the roots. The Summer time is perilous if ye dig, becauſe the ſap ſtirs amain. The beſt kind of ſoyl is ſuch as is fat, hot, and tender. Your earth muſt be lightly opened, that the Dung may go in, and waſh away; and but ſhallow, leſt you hurt the Roots; and in the ſpring, cloſely and equally made plain again for fear of Suckers. I could wiſh, that after my trees have fully poſſeſſed the ſoyl of mine Orchard, that every ſeven years at leaſt, the ſoyl were beſpread with dung half a foot thick at leaſt. Puddle water out of the Dunghill poured on plentifully, will not only moiſten but fatten exceedingly in *June*, and *July*. If it be thick and fat, and applied every year, your Orchard ſhall need none other ſoiling. Your ground may lye ſo low at the River ſide, that the flood ſtanding ſome dayes and nights thereon, ſhall ſave you all this labour of ſoyling.

CHAP. XIII.

Of Annoyances.

A Chief help to make every thing good, is to avoid the evil thereof: you ſhall never attain to that good of your Orchard you look for, unleſs you have a Gardener that can diſcern the diſeaſes of your trees, and other annoyances of your Orchard, and find out the cauſes thereof, and know and apply fit Remedies for the ſame. *For be your ground ſuch plants and trees as you would wiſh, and if they be waſted with hurtful things, what*

have

have you gained, but your labour for your travel? It is with an Orchard and every tree, as with man's body. The best parts of physick for preservation of health, is to foresee and cure diseases.

Two kinds of evils in an Orchard.

All the diseases of an Orchard are of two sorts, either internal, or external. I call those inward hurts which breed on, and in, particular trees.

1 Galls.	5 Bark bound.
2 Canker.	6 Bark pild.
3 Moss.	7 Worm.
4 Weakness in setting.	8 Deadly wounds.

Galls.

Galls, Cankers, Moss, Weakness, though they be divers diseases, yet (howsoever authors think otherwise) they rise all out of the same cause.

Galls we have described with their cause and remedy, in the eleventh Chapter under the name of fretters.

Canker.

Canker is the consumption of any parts of the tree bark and wood; which also in the same place is deciphered under the title of water-boughs.

Moss.

Moss is sensible seen and known of all, the cause is pointed out in the same Chapter, in the discourse of timber-wood, and partly also the remedy: but for Moss add this, that any time in summer (the spring is best, when the cause is removed) with an Hair cloth immediately after a showr of rain, rub off your Moss, or with a piece of wood (if the moss abound) formed like a great knife.

Weakness in setting.

Weakness in the setting of your fruit shall you find there also in the same Chapter, and his remedy. All these flow from the want of Roomth in good soyl, wrong planting, Chapter seven, and evil, or no dressing.

Bark bound.

Bark bound as I think riseth of the same cause, and the best and present remedy (the causes being taken away) is with your sharp knife in the spring, length way to launce his bark thorowout 3 or 4 sides of his boul.

Worm.

The disease called the worm is thus discerned: the bark will be hollow in divers places like gall, the wood will dye and dry, and you shall see easily the bark swell: it is verily to be thought that therein is bred some Worm. I have not yet thorowly sought it out, because I was never troubled therewithall; but onely

onely have seen such trees in divers places: I think it a Worm rather, because I see this disease in trees, bringing fruit of sweet taste, and the swelling shews as much. The remedy, (as I conjecture) is, so soon as you perceive the wound, the next Spring cut it out, bark and all, and apply Cows pis and vinegar presently, and so twice or thrice a week, for a months space: For I well perceive, if you suffer it any time, it eats the Tree or Bough round, and so kills. *Since I first wrote this treatise, I have changed my mind concerning the disease called the worm, because I read in the History of the West-Indians, that their Trees are not troubled with the disease called the Worm, or Canker, which ariseth of a raw and evil concocted humour, or sap. Witness* Pliny, *by reason the Country is more hot then ours; wherefore I think the best remedy is, (not disallowing the former, considering that the Worm may breed by such an humour) warm standing, sound lopping, and good dressing.*

Bark-pill'd, you shall find with his remedy, in the eleventh Chapter.

Wounds. Remedy.

Deadly wounds are, when a man's *Arborist* wanting skil, cuts off arms, boughs or branches an inch, or (as I see sometimes) an handful, or half a foot or more from the body: *These so cut, cannot cover in any time with sap, and therefore they dye, and dying they perish the heart, and so the tree becomes hollow, and with such a deadly wound cannot live long.*

The remedy is, if you find him before he be perished, cut him close, as in the 11. Chapter: If he be hoal'd, cut him close, fill his wounds though never so deep, with morter well tempered, and so close at the top his wound with a Sear-cloth nailed on, that no Air nor Rain approach his wound. If he be very old, and declining, he will recover; and the hole being closed, his wound within shall not hurt him for many years.

Hurts on your trees are chiefly, Ants, Earwigs, and Caterpillars. Of Ants, and Earwigs, is said, chap. 10. *Let there be no swarm of pismire neer your tree roots, no, not in your Orchard: turn them over in a frost, and pour in water, and you kill them.*

For *Caterpillars*, the vigilant Fruiterer shall soon espy their lodging by their web, or the decay of leaves eaten round about them: And being seen, they are easily destroyed with your hand,

or rather (if your tree may ſpare it) take ſprig and all: for the red ſpeckled Butter-fly doth ever put them, being her ſperm, among the tender ſprays for better feeding, eſpecially in drought: and tread them under your feet. I like nothing of ſmoak among trees. Unnatural heats are nothing good for natural trees. *This, for Diſeaſes of particular trees.*

External hurts are either things natural, or artificial. Natural things, externally hurting Orchards.

I Beaſts.	1 Deer.	II Birds.	1 Bulfinch.
	2 Goats.		2 Thruſh.
	3 Sheep.		3 Black-bird.
	4 Hare.		4 Crow.
	5 Cony.		5 Pye,
	6 Cattel.		&c.
	7 Horſe.		

The other things are.

1 Winds.
2 Cold.
3 Trees.
4 Weeds.
5 Worms.
6 Moles.
7 Filth.
8 Poyſonful ſmoak.

External wilful evils are theſe.

1 Walls.
2 Trenches.
3 Other works noiſome, done in or near your Orchard.
4 Evil Neighbours.
5 A careleſs Maſter.
6 An undiſcreet, negligent, or no keeper.

See you here an whole Army of miſchiefs banded in troops againſt the moſt fruitfull trees the earth bears? aſſailing your good labours. Good things have moſt enemies.

Remedy. A skilful Fruiterer muſt put to his helping hand, and diſband, and put them to flight.

Deer, &c. For the firſt rank of beaſts, beſides your out-ſtrong fence, you muſt have a fair and ſwift Grey-hound, a Stone-bow, Gun, and

if

if need require, an Apple with an hook for a Deer, and an Hare-pipe for an Hare.

Your Cherries, and other Berries, when they be ripe, will draw all the Black-birds, Thrushes, and Mag-pies, to your Orchard. The Bull-finch is a devourer of your fruit in the bud, I have had whole Trees shall'd out with them in Winter time. Birds.

The best remedy here is a Stone-Bow, a Piece, especially if you have a musket, or sparrow-hawk in winter, to make the Black-bird stoop into a bush, or hedge.

The Gardner must cleanse his soil of all other trees, but fruit-trees, as aforesaid, *chap.* 2. for which it is ordained; and I would especially name Oaks, Elms, Ashes, and such other great wood, but that I doubt it would be taken as an admission of lesser trees; for I admit of nothing to grow in my Orchard but fruit and flowers: if sap can hardly be good to feed our fruit-trees, should we allow of any other? especially those that will become their Masters, and wrong them in their lively-hood?

And though we admit without the fence, of wall-nuts in most plain places, Trees middle-most and Ashes, or Oaks, or Elms utmost, set in comely rows equally distant, with fair Allies twixt row and row, to avoid the boisterous blasts of winds, and within them also others for bees, yet we admit none of these into your Orchard plat: other remedies then this have we none against the nipping frost. Winds. Frosts.

Weeds in fertile soil, (because the general course is so) till your trees grow great, will be noisome, and deform your allies, walks, beds, and squares; your under gardeners must labour to keep all cleanly, and handsome from them, and all other filth, with a spade, weeding knives, rake with Iron teeth, a scraple of Iron thus formed. Weeds.

For Nettles, and ground Ivy after a showr.

When weeds, straw, sticks, and all other scrapings are gathered together, burn them not, but bury them under your crust in any place of your Orchard, and they will dye, and fatten your ground.

Worms. Moals.

Worms and Moals open the earth, and let in air to the Roots of your trees, and deform your ſquares and walks; and feeding in the earth, being in number infinite, draw on barrenneſs.

Remedy.

Worms may eaſily be deſtroyed. Any Summer evening, when it is dark, after a ſhowr with a candle you may fill buſhels; but you muſt tread nimbly, and where you cannot come to catch them, ſo ſift the earth with coal-aſhes an inch or two thickneſs, and that is a plague to them, ſo is ſharp gravel.

Moals will anger you, if your Gardner or ſome other moal-catcher eaſe you not; eſpecially, having made their fortreſſes among the Roots of your Trees; you muſt watch her well with a Moal-ſpear, at morning, noon, and night: when you ſee her utmoſt hill, caſt a trench betwixt her and her home, for ſhe hath a principal manſion to dwell and breed in about *April*, which you may diſcern by a principal hill, wherein you may catch her, if you trench it round, and ſure, and watch well; or wereſoever you can diſcern a ſingle paſſage, (for ſuch ſhe hath) there trench, and watch, and have her.

Wilfull annoyances muſt be prevented, and avoided by the love of the Maſter, and Fruiterer, which they bear to their Orchard.

Juſtice and liberality will put away evil neighbours, or evil neighbour-hood. And then, (if God bleſs and give ſucceſs to your labours) I ſee not what hurt your Orchard can ſuſtain.

CHAP. XIV.

The age of Trees.

IT is to be conſidered, All this treatiſe of trees tends to this end, that men may love and plant Orchards, whereunto there cannot be a better inducement then that they know, (or at leaſt be perſwaded) that all the benefit they ſhall reap thereby, whether of pleaſure, or profit, ſhall not be for a day, or a moneth, or one, or many, but many hundred years. Of good things, the greateſt, and moſt durable, is always the beſt. If therefore, out of reaſon, grounded upon experience, it be made (I think) manifeſt, but I am ſure profitable, that a fruit-tree in ſuch a ſoyl

and

and ſite, as is deſcribed, ſo planted and trimmed, and kept as is afore appointed, and duely ſoiled, ſhall dure a thouſand years: Why ſhould we not take pains, and be at two or three years charges, (for under ſeven years will an Orchard be perfected for the firſt planting, and in that time be brought to fruit) to reap ſuch a commodity, and ſo long laſting? The age of trees.

Let no man think this to be ſtrange, but peruſe, and conſider the reaſon. I have Apple-trees ſtanding in my little Orchard, which I have known theſe forty years, whoſe age before my time I cannot learn, it is beyond memory, though I have inquired of divers aged men of 80 years and upwards: Theſe trees, although come into my poſſeſſion very ill ordered, and miſhapen, and one of them wounded to his heart, and that deadly, (for I know it will be his death) with a wound, wherein I might have put my foot into the heart of his bulk, (now it is leſs) notwithſtanding, with that ſmall regard they have had ſince; they ſo like, that I aſſure my ſelf they are not come to their growth by more then two parts of three, which I diſcern not onely by their own growth, but alſo by comparing them with the bulk of other trees. And I find them ſhort (at leaſt) by ſo many parts in bigneſs, although I know thoſe other fruit-trees to have been much hindred in their ſtature by evil guiding. Here hence I gather thus: Gathered by reaſon out of experience.

If my trees be a hundred years old, and yet want two hundred of their growth before they leave increaſing, which make three hundred, then muſt we needs reſolve, that this three hundred years are but the third part of a trees life; becauſe, (as all things living beſides) ſo trees muſt have allowed them for their increaſe one third, another third for their ſtand, and a third part of time alſo for their decay. All which time of a tree amounts to nine hundred years; three hundred for increaſe, three hundred for his ſtand, whereof we have the term [ſtature] and three hundred for his decay: and yet I think, (for we muſt conjecture by comparing, becauſe no one man liveth to ſee the full age of trees) I am within the compaſs of his age, ſuppoſing alwayes the fore-ſaid means of preſerving his life. Conſider the age of other living Creatures: The Horſe, and moiled Ox, wrought to an untimely death, yet double the time of their increaſe. Parts of a trees age.

creaſe. A dog likewiſe increaſeth three, ſtands three at leaſt, and in as many (or rather more) decays.

Man's age. Every living thing beſtows the leaſt part of his age in his growth, and ſo muſt it needs be with trees. A man comes not to his full growth and ſtrength (by common eſtimation) before thirty years, and ſome ſlender, and clean bodies, not till forty: So long alſo ſtands his ſtrength, and ſo long alſo muſt he have allowed by courſe of nature to decay: Ever ſuppoſing that he be well kept with neceſſaries, and from, and without ſtrains, bruiſes and all other domineering diſeaſes. I will not ſay upon true report, that Phyſick holds it poſſible, that a clean body kept by theſe three Doctors, *Doctor Dyet*, *Doctor Quiet*, and *Doctor Merryman*, may live near a hundred years: Neither will I here urge the long years of *Methuſelah*, and thoſe men of that time, becauſe you will ſay, Man's dayes are ſhortned ſince the flood. But, what hath ſhortned them? God, for man's ſins; but, by means, as want of knowledge, evil Government, Riot, Gluttony, Drunkenneſs, and (to be ſhort) the encreaſe of the curſe, our ſins increaſing in an Iron and wicked age.

Now, if a man, whoſe body is nothing (in a manner) but tender rottenneſs, whoſe courſe of life cannot by any means, by Counſel, reſtraint of Laws, or puniſhment, nor hope of praiſe, profit, or eternal glory, be kept within any bounds, who is degenerate clean from his natural feeding, to effeminate niceneſs, and cloying his body with exceſs of meat, drink, ſleep, &c. and to whom nothing is ſo pleaſant, and ſo much deſired, as the cauſes of his own death, as idleneſs, luſt, &c. may live to that age: I ſee not but a tree of a ſolid ſubſtance, not damnified by heat, or cold, capable of, and ſubject to any kind of ordering, or dreſſing, that a man ſhall apply unto him, feeding naturally, as from the beginning, disburthened of all ſuperfluities, eaſed of, and of his own accord avoiding, the cauſes that may annoy him, ſhould double the life of a man, more then twice told: and yet natural Philoſophy, and the univerſal conſent of all Hiſtories tell us, that many other living creatures far exceed man in length of years: As the Hart, and the Raven. Thus reporteth that famous *Roterdam* out of *Heſiodus*, and many other Hiſtoriographers. The teſtimony of *Cicero* in his book *De Senectute*, is weighty to this

this purpose, that we must *in posteras ætates serere arbores*, which can have none other sence, but, that our fruit-trees, whereof he speaks, can indure for many ages.

What else are trees, in comparison with the earth, but as hairs to the body of a man? And it is certain, without poysoning, evil, and distemperate dyet, and usage, or other such forcible cause, the hairs dure with the body. That they be called excrements, it is by reason of their superfluous growth: (for cut them as often as you list, and they will still come to their natural length) Not in respect of their substance, and nature. Hairs endure long, and are an ornament, and of use also to the body, as trees to the earth.

So that I resolve upon good reason, that fruit-trees well ordered, may live and like a thousand years, and bear fruit; and the longer, the more, the greater, and the better, because his vigour is proud and stronger, when his years are many. You shall see old trees put forth their buds, and blossoms, both sooner and more plentifull then young trees, by much. And I sensibly perceive my young trees to inlarge their fruit as they grow greater, both for number and greatness. Young Heifers bring not forth Calves so fair, neither are they so plentifull to milk, as when they be come to be old Kine. No good House-wife will breed of a young, but of an old breed-mother: It is so in all things naturally, therefore in trees.

And if fruit-trees last to this age, how many ages is it to be supposed, strong, and huge timber-trees will last? whose huge bodies require the years of divers *Methuselahs*, before they end their dayes, whose sap is strong and bitter, whose bark is hard and thick, and their substance solid and stiff: all which, are defences of health, and long life. Their strength withstands all forcible winds; their sap of that quality is not subject to worms and tainting; their bark receives seldome or never by casualty, any wound: And not only so, but he is free from removals, which are the death of millions of trees, whereas the fruit-tree in comparison, is little, and often blown down, his sap sweet, easily, and soon tainted, his bark tender, and soon wounded, and himself used by man, as man useth himself, that is, either unskilfully, or carelessly. The age of Timber-trees.

It

Age of trees discerned.

It is good for some purposes, to regard the age of your fruit-trees, which you may easily know, till they come to accomplish twenty years, by his knots: Reckon from his Root upward an arm, and so to his top twig, and every years growth is distinguished from other by a knot, except lopping or removing do hinder.

CHAP. XV.

Of gathering and keeping Fruit.

General rule.

ALthough it be an easie matter, when God shall send it, to gather and keep fruit, yet are there certain things worthy your regard: You must gather your fruit when it is Ripe, and not before, else will it wither, and be tough and sowr. All fruits generally are Ripe, whenthey begin to fall: For trees do as all other bearers do, when their young ones are Ripe, they will wain them. The Dove her Pidgeons, the Coney her Rabbets, and Women their Children. Some fruit-trees sometimes getting a taint in the setting, with a frost, or evil wind, will cast their fruit untimely, but not before they leave giving them sap, or they leave growing: Except from this fore-said rule, Cherries, Damsons, and Bullis. The Cherry is Ripe when he is swelled, wholly Red, and sweet: Damsons and Bullis not before the first frost.

Cherries, &c.

Apples.

Apples are known to be Ripe, partly by their colour, growing towards a yellow, except the Leather-coat, and some Pears, and Greenings.

When.

Timely Summer-fruit will be ready, some at Midsummer, most at Lammas for present use; but generally, no keeping fruit before *Michaeltide*. Hard winter fruit, and Wardens longer.

Gather at the full of the Moon, for keeping, gather dry for fear of Rotting.

Dry stalks.

Gather the stalks withal, for a little wound in fruit is deadly; but not the stump, that must bear the next fruit; nor leaves, for moisture putrifies.

Severally.

Gather every kind severally by it self, for all will not keep alike, and it is hard to discern them, when they are mingled.

Over-laden trees.

If your trees be over-laden, (as they will be, being ordered, as is before taught) I like better of pulling some off, (though they be

be not ripe) neer the top end of the bough, then of propping by much, the rest shall be better fed. Propping puts the boughs in danger, and frets it at least.

Instruments: A long Ladder of light Fir, a Stool ladder, as in the eleventh Chapter. A gathering-apron like a poak before you, made of purpose, or a Wallet hung on a bough, or a basket with a sieve bottom, or skin bottom, with lathes or splinters under, hung in a rope to pull up and down: bruise none, every bruise is to fruit death; if you do, use them presently. An hook to pull boughs to you is necessary. Break no boughs. Instruments. Bruises.

For keeping, lay them in a dry loft, the longest-keeping Apples first and furthest on dry straw, on heaps, ten or fourteen dayes, thick, that they may sweat. Then dry them with a soft and clean cloth, and lay them thin abroad. Long-keeping fruit would be turned once in a month softly; but not in, nor immediately after frost. In a loft, cover'd well with straw, but rather with chaff or bran: For frost doth cause tender rottenness. Keeping.

CHAP. XVI.

Of Profits.

NOw pause with your self, and view the end of all your Labours in an Orchard: unspeakable pleasure, and infinite commodity. The pleasure of an Orchard I refer to the last Chapter, for the conclusion; and in this Chapter, a word or two of the profit, which thorowly to declare is past my skill; and I account it as if a man should attempt to add light to the Sun with a candle, or number the Stars. No man that hath but a mean Orchard or judgment but knows, that the commodity of an Orchard is great: Neither would I speak of this, being a thing so manifest to all; but that I see, that through the carelesness of men, it is a thing generally neglected. But let them know, that they lose hereby the chiefest good which belongs to house-keeping.

Compare the Commodity that commeth of half an acre of ground, set with fruit-trees and herbs, so as is prescribed, and an whole acre (say it be two) with corn, or the best commodity you can wish, and the Orchard shall exceed by divers degrees.

In *France*, and some other Countries, and in *England*, they make great use of Cider and Perry, thus made: Dress every apple, the stalk, upper end, and all galls away, stamp them, and Cyder and Perry.

ſtrain them, and within twenty four hours tun them up into clean, ſweet, and ſound veſſels, for fear of evil air, which they will readily take: and if you hang a poakfull of Cloves, Mace, Nutmegs, Cinamon, Ginger, and peels of Lemons in the middeſt of the veſſel, it will make it as wholſome and pleaſant as Wine. The like uſage doth Perry require.

Theſe drinks are very wholſome; they cool, purge, and prevent hot agues. But I leave this skil to Phyſicians.

Fruit. The benefit of your Fruit, Roots, and Herbs, though it were but to eat and ſell, is much.

Water. Water diſtilled of Roſes, Woodbind, Angelica, are both profitable, and wondrous pleaſant, and comfortable. Saffron and Licoras will yield you much.

Conſerves. Conſerves, and Preſerves, are ornaments to your feaſts, health in your Sickneſs, and a good help to your friend, and to your purſe.

He that will not be moved with ſuch unſpeakable profits, is well worthy to want, when others abound in plenty of good things.

CHAP. XVII.

Ornaments.

ME-thinks hitherto we have but a bare Orchard for fruit, and but half good, ſo long as it wants thoſe comely Ornaments that ſhould give beauty to all our labours, and make much for the honeſt delight of the owner and his friends.

Delight the chief end of Orchards. For it is not to be doubted, but as God hath given man things profitable, ſo hath he allowed him honeſt comfort, delight, and recreation in all the works of his hands. Nay, all his labours under the Sun without this are troubles, and vexations of mind: For what is greedy gain, without delight, but moiling, and turmoiling in ſlavery? But comfortable delight, with content, is the good of every thing, and the pattern of Heaven. A morſel of bread with comfort, is better by much than a fat Ox with unquietneſs. And who can deny but the Principal end of an Orchard, is the honeſt delight of one wearied with the works of his lawful calling? The very works of, and in an Orchard and Garden, are better than the eaſe and reſt of, and from other labours. When God had made a man after his own

An Orchard delightſome.

Image,

Image, in a perfect state, and would have him to represent himself in authority, tranquillity, and pleasure upon the earth, he placed him in *Paradise*. What was *Paradise*? but a Garden, an Orchard of trees and herbs, full of pleasure, and nothing there but delights. The gods of the earth resembling the great God of heaven in Authority, Majesty, and Abundance of all things, wherein is their most delight? and whither do they withdraw themselves from the troublesome affairs of their estate, being tyred with the hearing and judging of litigious controversies, choaken (as it were) with the close air of their sumptuous buildings, their stomacks cloyed with variety of Banquets, their ears filled and over-burthened with tedious discourlings? Whither, but into their Orchards, made and prepared, dressed and destinated for that purpose, to renew and refresh their senses, and to call home their over-wearied spirits? Nay, it is (no doubt) a comfort to them, to set open their casements into a most delicate Garden and Orchard, whereby they may not only see that, wherein they are so much delighted, but also to give fresh, sweet and pleasant air to their Galleries and Chambers.

An Orchard in Paradise.

Cause of weariſomness.

Orchard is the remedy.

And look what these men do by reason of their greatness and ability, provoked with delight, the same doubtless would every of us do, if power were answerable to our desires; whereby we shew manifestly, that of all other delights on earth, they that are taken by Orchards are most excellent, and most agreeing with nature.

All delights in Orchards.

For whereas every other pleasure commonly fills some one of our senses, and that only with delight; this makes all our senses swim in pleasure, and that with infinite variety, joyned with no less commodity.

This delights all the senses.

That famous Philosopher, and matchless Oratour, *M. T. C.* prescribeth nothing more fit, to take away the tediousness of three or fourscore years, than the pleasure of an Orchard.

Delighteth old age.

What can your eye desire to see, your ears to hear, your mouth to taste, or your nose to smell, that is not to be had in an Orchard, with abundance of variety? What more delightsome than an infinite variety of sweet smelling flowers, decking with sundry colours, the green mantle of the earth, the universal mo-

Causes of delight in any Orchard.

ther of us all, so by them bespotted, so dyed, that all the World cannot sample them, and wherein it is more fit to admire the Dyer, then imitate his workmanship, colouring not onely the earth, but decking the air, and sweetning every breath and spirit.

Flowers.

The Rose red, Damask, Velvet, and double double Province-Rose, the sweet Musk-Rose double and single, the double and single white-Rose: The fair and sweet-senting Woodbine, double and single, and double double. Purple Cowslips, and double Cowslips, and double double Cowslips; Primrose double and single. The Violet nothing behind the best, for smelling sweetly. A thousand more will provoke your content.

Borders and squares.

And all these by the skil of your Gardner, so comelily and orderly placed in your borders and squares, and so intermingled, that one looking thereon cannot but wonder to see, what Nature, corrected by Art, can do.

Mounts.

When you behold in divers corners of your Orchard *Mounts* of stone or wood, curiously wrought within and without, or of earth covered with fruit-trees, Kentish Cherries, Damsons, Plums, &c. with stairs of precious Workmanship; and in some corner (or more) a true Dial or Clock, and some Antick works; and especially silver sounding Musick, mixt Instruments, and Voices, gracing all the rest: How will you be wrapt with Delight!

Whence you may shoot a Buck.
Dial.
Musick.

Walks.

Large Walks, broad and long, close and open, like the *Tempe*-groves in *Thessaly*, raised with gravel and sand, having seats and banks of Camomile; all this delights the mind, and brings health to the body.

Seats.

Order of trees.

View now with delight the works of your own hands, your fruit-trees of all sorts, loaden with sweet blossoms, and fruit of all tastes, operations and colours; your trees standing in comely order which way soever you look.

Your borders on every side hanging and dropping with Feberries, Raspberries, Barberries, Currans; and the Roots of your trees powdred with Strawberries, Red, White, and Green, what a pleasure is this! Your Gardner can frame your lesser wood to the shape of men armed in the field, ready to give battel; of swift running Grey-hounds, or of well sented and true Running Hounds

Shape of men and beasts.

Hounds to chase the Deer, or hunt the Hare. This kind of hunting shall not waste your corn, nor much your coyn.

Mazes well framed a man's height, may perhaps make your friend wander in gathering of berries till he cannot recover himself without your help. Mazes.

To have occasion to exercise within your Orchard, it shall be a pleasure to have a bowling-Alley, or rather (which is more manly, and more healthful) a pair of Butts, to stretch your Arms. Bowling-Alley. Butts.

Rosemary and sweet Eglantine are seemly Ornaments about a Door or Window, and so is Woodbine. Herbs.

Look Chap. 15. and you shall see the form of a Conduit; if there were two or more, it were not amiss. Conduit.

And in mine own opinion I could highly commend your Orchard, if either through it, or hard by it, there should run a pleasant River with silver streams, you might sit in your Mount, and Angle a peckled Trout, sleighty Eele, or some other dainty Fish. Or Moats, whereon you may row with a Boat, and fish with Nets. River. Moats.

Store of Bees in a warm and dry Bee-house, comely made of Fir-boards, to sing, and sit, and feed upon your flowers and sprouts, make a pleasant noise and sight. For cleanly and innocent Bees, of all other things, love, and become, and thrive in an Orchard. If they thrive, (as they must needs, if your Gardner be skilful, and love them; for they love their friends, and hate none but their enemies) they will, besides the pleasure, yield great profit to pay him his wages; yea, the increase of twenty Stocks or Stools with other fees, will keep your Orchard. Bees.

You need not doubt their stings, for they hurt not whom they know, and they know their Keeper and acquaintance. If you like not to come among them, you need not doubt them; for but neer their store, and in their one defence, they will not fight, and in that case only (and who can blame them?) they are manly, and fight desperately. Some (as that honourable Lady at *Hacknes*, whose name doth much grace mine Orchard) use to make seats for them in the stone-walls of their Orchard, or Garden, which is good, but wood is better.

A Vine over-shadowing a seat, is very comely, though her Grapes with us ripen slowly. Vine.

One

Birds. Nightingale.

One chief grace that adorns an Orchard, I cannot let ſlip: a brood of Nightingals, who with ſeveral notes and tunes, with a ſtrong delightſome voice out of a weak body, will bear you company night and day. She loves (and lives in) hots of woods in her heart. She will help you to cleanſe your trees of Caterpillers, and all noyſome worms and flyes. The gentle Robin-red-breſt will help her, and in winter in the coldeſt ſtorms will keep a part. Neither will the ſilly Wren be behind in Summer, with her diſtinct whiſtle, (like a ſweet Recorder) to chear your ſpirits.

Robin Red-breſt. Wren.

Black-bird. Thruſh.

The Black-bird and Threſtle (for I take it, the Thruſh ſings not, but devours) ſing loudly in a *May* morning, and delights the ear much, and you need not want their company, if you have ripe Cherries or Berries, and would as gladly as the reſt do your pleaſure: but I had rather want their company than my fruit.

What ſhall I ſay? A thouſand of pleaſant delights are attending an Orchard: and ſooner ſhall I be weary, than I can reckon the leaſt part of that pleaſure, which one that hath, and loves an Orchard, may find therein.

What is there of all theſe few that I have reckoned, which doth not pleaſure the eye, the ear, the ſmell, and taſte? And by theſe ſenſes, as Organs, Pipes, and windows, theſe delights are carried to refreſh the gentle, generous, and noble mind.

Your own labour.

To conclude, what joy may you have, that you living to ſuch an age, ſhall ſee the bleſſing of God on your labours while you live, and leave behind you to heirs, or ſucceſſors, (for God will make heirs) ſuch a work, that many ages after your death ſhall record your love to their Country? And the rather, when you conſider (Chap. 14.) to what length of time your work is to laſt.

FINIS.

THE *COUNTRY HOUSE-WIFE'S* GARDEN,

CONTAINING

Rules for Herbs, and Seeds, of common uſe, with their Times and Seaſons when to Set and Sow them.

Together

With the Husbandry of Bees, publiſhed with Secrets very neceſſary for every *Houſwife*: As alſo divers new Knots for Gardens.

The Contents ſee at large, in the laſt Page.

Geneſ. 2. 29.

I have given unto you every Herb, and every Tree, that ſhall be to you for meat.

LONDON,

Printed for *George Sawbridge*. 1668.

THE
COUNTRY HOUSE-WIFES
GARDEN.

CHAP I.

The Soyl.

THe Soyl of an Orchard and Garden differ only in these three points: First, the Gardens soil would be somewhat dryer, because herbs being more tender then trees, can neither abide moisture nor drought, in such excessive measure as trees; and therefore having a drier soyl, the remedy is easie against drought: if need be, water soundly, which may be done with small labour, the compass of a Garden being nothing so great as of an Orchard: and this is the cause (if they know it) that Gardners raise their squares; but if moisture trouble you, I see no remedy without a general danger, except in Hops, which delight much in a low and sappy earth. Dry. Hops.

Secondly, the soyl of a Garden would be plain and level, at least every square, (for we purpose the square to be the fittest form) the reason is, the herbs of a garden wanting such helps as should stay the water, which an orchard hath, & the roots of herbs

being mellow and loose, is soon either washt away, or sends out his heart by too much drenching and washing.

Thirdly, if a Garden soil be not clear of weeds, and namely of grass, the herbs shall never thrive; for how should good herbs prosper, when evil weeds wax so fast, considering good herbs are tender in respect of evil weeds: these being strengthned by nature, and the other by art? Gardens have small place in comparison, and therefore may more easily be followed, at the least one half year before, and the better dressed after it is framed. And you shall find that clean keeping doth not onely avoid danger of gathering weeds, but also is a special ornament, and leaves more plentifully sap for your tender herbs.

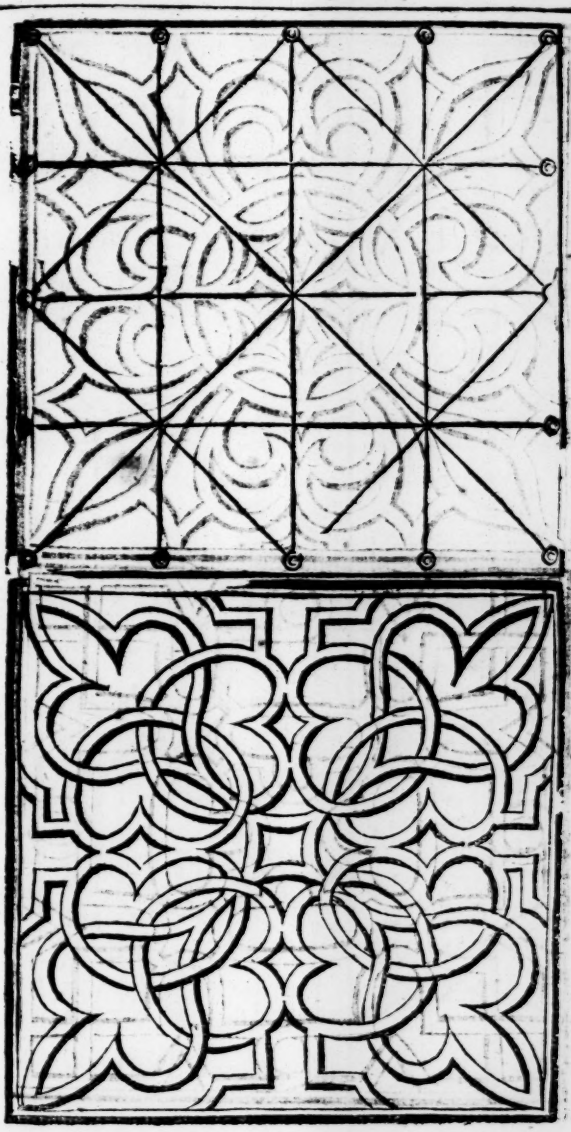
CHAP. II.
Of the Sites.

I Cannot see in any sort, how the site of the one should not be good and fit for the other: The ends of both being one, good, wholesome, and much fruit joyned with delight, unless trees be more able to abide the nipping frosts than tender herbs; but I am sure, the flowers of trees are as soon perished with cold, as any herb, except Pumpion, and Melons.

CHAP. III.
Of the Form.

LEt that which is said in the Orchards form, suffice for a Garden in general: but for special forms in squares, they are as many, as there are devices in Gardners brains. Neither is the wit and art of a skilful Gardner in this point not to be commended, that can work more variety for breeding of more delightsome choice, and of all those things, where the owner is able and desirous to be satisfied. The number of Forms, Mazes, and Knots is so great, and men are so diversly delighted, that I leave every House-wife to her self, especially seeing to set down many, had been but to fill much paper; yet lest I deprive her of all delight and direction, let her view these few, choice, new forms; and note this generally, that all plots are square, and all are bordered about with Privit, Raisins, Fea-berries, Roses, Thorn, Rosemary, Bee-flowers, Hisop, Sage, or such like.

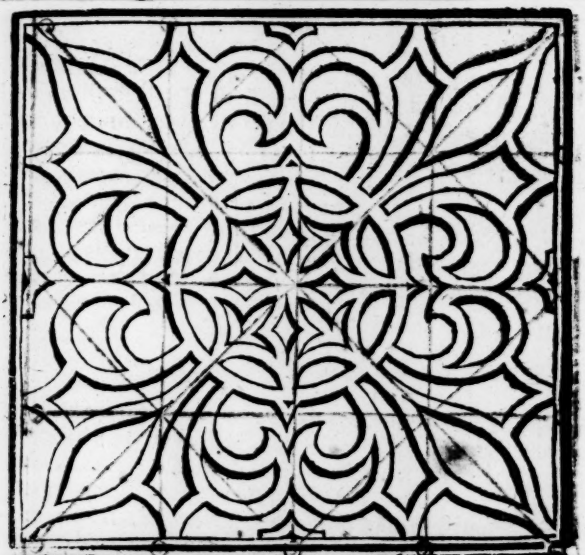
CHAP.



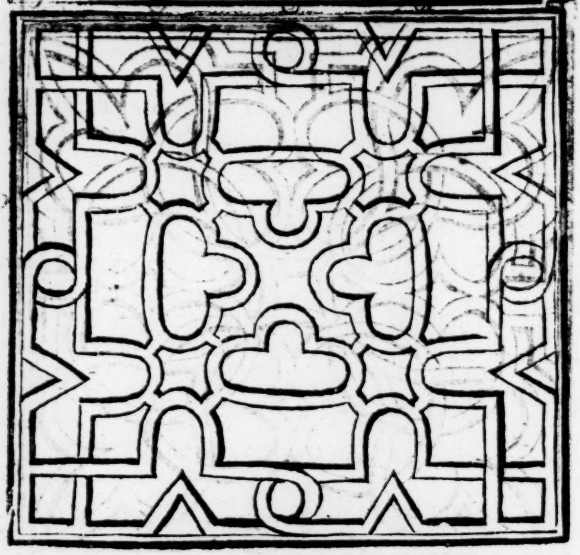
The ground plot for knots.

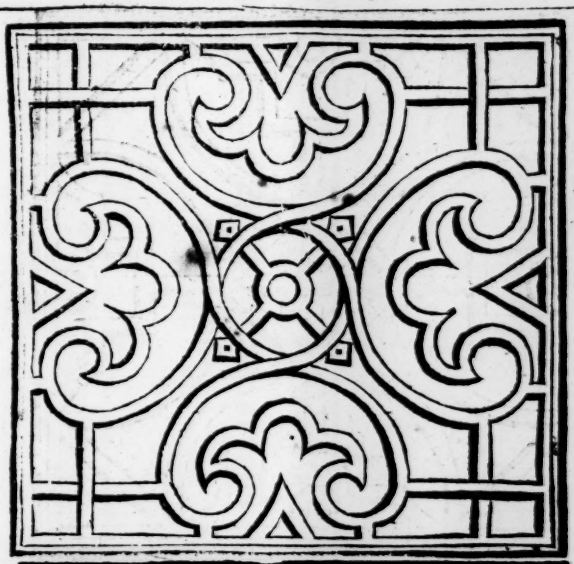
Cinkfoil.

Flower-deluce.

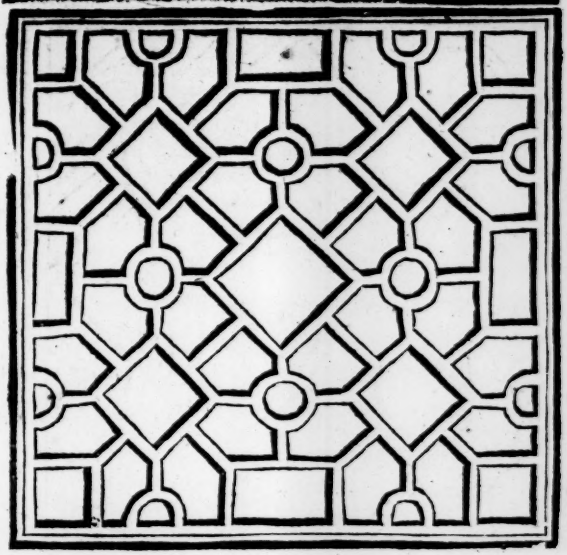


The Trefoyl.



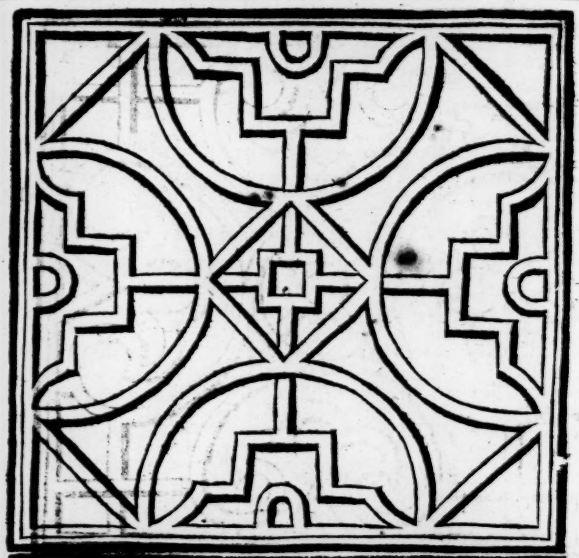


The fret.

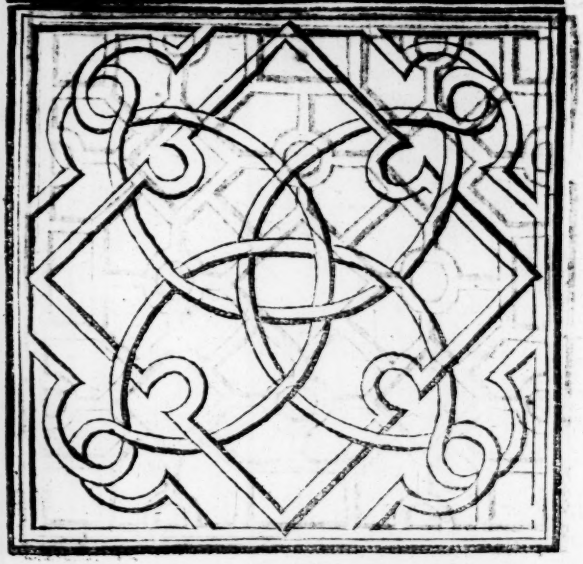


Lozenges.

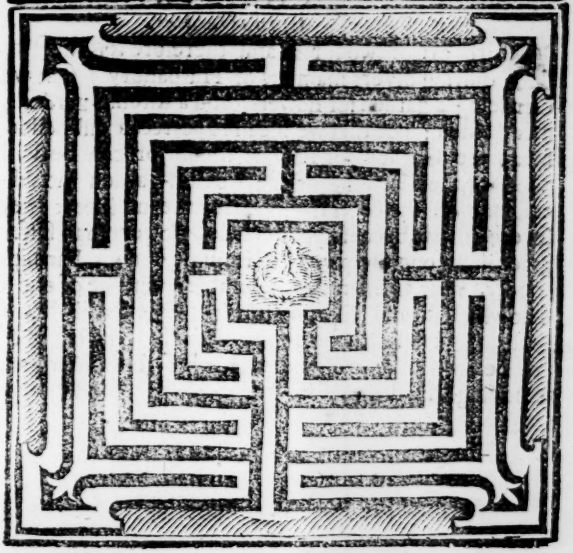
Cross-bow.



Diamond.



Oval.



Maze.

CHAP. IV.
Of the Quantity.

A Garden requireth not so large a scope of ground as an Orchard, both in regard of the much weeding, dressing, and removing, and also the pains in a Garden is not so well repayed home, as in an Orchard. It is to be granted, that the Kitching garden doth yield rich gains, by Berries, Roots, Cabbages, &c. yet these are no way comparable to the fruit of a Rich Orchard: but notwithstanding I am of opinion, that it were better for *England* that we had more Orchards and Gardens, and more large. And therefore, we leave the quantity to every mans ability and will.

CHAP. V.
Of Fence.

SEeing we allow Gardens in Orchard plots, and the benefit of a Garden is much, they both require a strong and shrowding fence. Therefore leaving this, let us come to the Herbs themselves, which must be the fruit of all these labours.

CHAP. VI.
Of two Gardens.

HErbs are of two sorts, and therefore it is meet, (they requiring divers manners of Husbandry) that we have two Gardens; a garden for flowers, and a Kitchin-garden; or a Summer garden: not that we mean so perfect a distinction, that we mean the Garden for flowers should or can be without herbs good for the Kitchin, or the Kitchin-garden should want flowers, nor on the contrary; but for the most part they would be severed: first, because your Garden-flowers shall suffer some disgrace, if among them you intermingle Onions, Parsnips, &c. Secondly, your Garden that is durable, must be of one form: but that which is your Kitchins use, must yield daily Roots, or other herbs, and suffer deformity. Thirdly, the herbs of both will not be both alike ready, at one time, either for gathering, or removing. First therefore

Of

Of the Summer Garden.

THese herbs and flowers are comely and durable for squares & Knots, and all to be set at *Michael-tide*, or somewhat before; that they may be settled in, and taken with the ground before winter, though they may be Set, especially sown, in the spring.

Roses of all sorts, (spoken of in the Orchard) must be Set. Some use to set slips and twine them, which sometimes, but seldome thrive all.

Rosemary, Lavender, Bee-flowers, Isop, Sage, Time, Cowslips, Piony, Dailies, Clove-Gilliflowers, Pinks, Sothernwood, Lillies, of all which hereafter.

Of the Kitchin Garden.

THongh your Garden for flowers doth in a sort peculiarly challenge to it self a perfect, and exquisite form to the eyes, yet you may not altogether neglect this, where your herbs for the pot do grow: And therefore some here make comely borders with the herbs aforesaid; the rather, because abundance of Roses and Lavender, yield much profit, and comfort to the senses: Rose water, Lavender, the one cordial (as also the Violets, Burrage, and Buglos) the other reviving the spirits by the sense of smelling, both most durable for smell, both in flowers and water: you need not here raise your beds, as in the other Garden, because Summer towards, will not let too much wet annoy you, and these herbs require more moisture: yet must you have your beds divided, that you may go betwixt to weed, and somewhat of form would be expected: To which it availeth that you place your herbs of biggest growth, by walls, or in borders, as Fennel, &c. and the lowest in the middest, as Saffron, Strawberries, Onions, &c.

CHAP. VII.
Division of Herbs.

GArden herbs are innumerable, yet these are common, and sufficient for our Country-housewives.

Herbs of greater growth.

Fennel, Angelica, Tansie, Hollihock, Lovage, Elicampane, French Mallows, Lillies, French Poppy, Endive, Succory, and Clary.

Herbs of middle growth.

Burrage, Buglofs, Parsly, Sweet Sicily, Flower-deluce, Stock-Gilli-flowers, Wall-flowers, Anniseeds, Coriander, Fether-few, Mary-golds, Oculus Christi, Langdibeef, Alexanders, Carduus-benedictus.

Herbs of smaller growth.

Pansie, or Harts-ease, Coast-Marjoram, Savory, Straw-berries, Saffron, Licoras, Daffadowndillies, Leeks, Chives, Chibbals, Skerots, Onions, Bachelors buttons, Dasies, Peniroyal.

Hitherto, I have only reckoned up, and put in this rank, some Herbs: their Husbandry follows, each in an Alphabetical order, the better to be found.

CHAP. VIII.

Husbandry of Herbs.

ALexanders, are to be renewed as Angelica. It is a timely Pot-herb.

Angelica is renewed with the seed, whereof he beareth plenty the second year, and so dyeth. You may remove the roots the first year. The leaves distilled, yield water, soveraign to expel pain from the stomack. The Root dried, taken in the fall, stoppeth the pores against infection.

Anniseeds make their growth, and bear seeds the first year, and dieth as Coriander: it is good for opening the pipes, and it is used in Comfits.

Artichoaks, are renewed by dividing the Roots into Sets, in *March*, every third or fourth year. They require a several usage, and therefore a several whole plot by themselves, especially, considering they are plentifull of fruit much desired.

Burrage, and Buglofs, two Cordials, renew themselves by seed yearly, which is hard to be gathered, they are exceeding good Pot-herbs, good for Bees, and most comfortable for the heart and stomack, as Quinces and Wardens.

Camomile, set roots in banks and walks, it is sweet smelling, qualifying head-ach.

Cab-

Cabbages, require great room, they seed the second year, sow them in *February*, remove them when the plants are an handfull long, set deep and wet. Look well in drought for the white Caterpillars worm, the spauns under the leaf closely; for every living Creature doth seek food and quiet shelter, and growing quick they draw to, and eat the heart: you may find them in a rainy dewy morning.

It is a good Pot-herb, and of this herb called *Cole*, our Country Housewifes give their pottage their name, and call them *Caell*.

Carduus Benedictus, or blessed thistle, seeds and dyes the first year: the excellent vertue thereof, I refer to Herbals, for we are Gardiners, not Physicians.

Carrets are sown late in *April*, or *May*, as Turneps, else they seed the first year, and then their roots are naught; the second year they dye, their root grow great, and require large room.

Chibals or Chives, have their roots parted, as Garlick, Lillies, &c. and so are they set every third or fourth year: a good pot-herb, opening, but evil for the eyes.

Clary, is sown, it seeds the second year, and dyes. It is somewhat harsh in tast, a little in pottage is good, it strengtheneth the reins.

Coast, Root parted, makes Sets in *March*, it bears the second year; it is used in Ale in *May*.

Coriander, is for usage and uses, much like Anniseeds.

Daffadowndillies, have their roots parted, and set once in three or four years, or longer time. They flower timely, and after *Midsummer* are scarcely seen. They are more for Ornament, then for use, so are Daisies.

Daisie roots parted and Set, as Flower-deluce and Camomile, when you see them grow too thick or decay. They be good to keep up, and strengthen the edges of your borders, as Pinks, they be red, white, mixt.

Elicampane Root is long lasting, as is the Lovage: it seeds yearly, you may divide the Root, and set; the Root taken in winter it is good (being dryed, powdered, and drank) to kill itches.

Endive and Succory, are much like in nature, shape, and use,

they renew themselves by seed, as Fennel, and other herbs. You may remove them before they put forth shanks: a good Pot-herb.

Fennel is renewed, either by the seeds (which it beareth the second year, and so yearly in great abundance) sown in the fall or Spring, or by dividing one Root into many Sets, as Artichoke. It is long of growth and life. You may remove the root unshankt: It is exceeding good for the eyes, distilled, or any otherwise taken: it is used in dressing Hives for swarms, a very good Pot-herb, or for Sallets.

Fether-few shakes seed. Good against a shaking Fever, taken in a posset drink fasting.

Flower-deluce, long lasting, divide his roots, and Set: the roots dryed have a sweet smell.

Garlick may be set an handfull distance, two inches deep, in the edge of your beds. Part the head into several cloves, and every clove set in the latter end of *February*, will increase to a great head before *September*: good for opening, evil for eyes; when the blade is long, fasten two and two together, the heads will be bigger.

Hollihock riseth high, feedeth and dyeth; the chief use I know, is ornament.

Isop is reasonable long lasting: young Roots are good Set, slips better. A good pot-herb.

July-flowers, commonly called Gilly-flowers, or Clove July-flowers, (I call them so, because they flower in *July*) they have the name of Cloves, of their sent. I may well call them the King of flowers except the Rose, & the best sort of them are called Queen-July-flowers. I have of them nine or ten several colours, and divers of them as big as Roses; of all flowers (save the Damask Rose) they are the most pleasant to sight and smell, they last not past three or four years unremoved. Take the slips (without shanks) and Set any time save in extream frost, but especially at *Michael-tide*. Their use is much in ornament, and comforting the spirits, by the sense of smelling.

July flowers of the wall, or wall July-flowers, Wall-flowers, or Bee flowers, or Winter-July-flowers, because growing in the walls even in winter, and good for Bees, will grow even in stone-walls,

walls, they will seem dead in Summer, and yet revive in Winter, they yield seed plentifully, which you may sow at any time, or in any broken earth, especially on the top of a mud-wall, but moist; you may set the root before it be brancht, every slip that is not flowr'd will take root, or crop him in Summer, and he will flower in Winter, but his winter seed is untimely. This and Palmes are exceeding good, and timely for Bees.

Leeks yield seed the second year, unremoved, and dye, unless you remove them, usually to eat with Salt and Bread, as Onions always green, good pot-herb, evil for the eyes.

Lavender-spike would be removed within seven years, or eight at the most: slips twined, as Hysop and Sage, would take best at *Michael-tide*. This flower is good for Bees, most comfortable for swelling, except Roses: and kept dry, is as strong after a year, as when it is gathered. The water of this is comfortable.

White *Lavender* would be removed sooner.

Lettice yields seed the first year, and dyes: sow betime, and if you would have them Cabbage for sallets, remove them as you do Cabbage. They are usual in Sallets and in the pot.

Lillies white and red, remove once in three or four years, their roots yield many Sets, like the Garlick. *Michael-tide* is the best. They grow high, after they get root. These roots are good to break a boil, as are Mallows and Sorrel.

Mallows, French or gagged, the first or second year, seed plentifully. Sow in *March*, or before. They are good for the housewifes pot, or to break a bunch.

Marigolds, most commonly come of seed, you may remove the Plants when they are two inches long. The double Marigold, being as big as a little Rose, is good for shew. They are a good Pot-herb.

Oculus Christi, or Christs-eye, seeds, and dyes the first or second year: you may remove the young Plants, but seed is better. One of these seeds put into the eye, within three or four hours will gather a thick skin, clear the eye, and bolt it self forth without hurt to the eye. A good Pot-herb.

Onions are sown in *February*, they are gathered at *Michael-tide*, and all the Summer long, for Sallet; as also young Parsly,

Sage,

Sage, Chibals, Lettice, sweet Sicily, Fennel, &c. good alone, or with meat, as muttons, &c. for sawce, especially for the pot.

Parsly sow the first year, and use the next year; it seeds plentifully, an herb of much use, as sweet Sicily is. The seed and roots are good against the stone.

Parsnips require an whole plot, they be plentiful and common, sow them in *February*, the King's (that is in the middle) seed broadest and reddest. Parsnips are sustenance for a strong stomack, not good for evil eyes: When they cover the earth, in a drought to tread the tops, makes the Roots bigger.

Penny-royal, or pudding grass, creeps along the ground, like ground Ivy. It lasts lost, like daisies, because it puts and spreads daily new roots. Divide, and remove the roots, it hath a pleasant tast and smell, good for the pot, or hacktmeat, or a Haggas pudding.

Pumpions, set Seeds with your finger, a finger deep, late in *March*, and so soon as they appear, every night if you doubt frost, cover them, and water them continually out of a water pot: they be very tender, their fruit is great and waterish.

French-Poppy beareth a great flower, and the seed will make you sleep.

Raddish is sauce for cloyed stomacks, as Capers, Olives, and Cucumbers; cast their seeds all summer long here and there, and you shall have them always young and fresh.

Rosemary, the grace of herbs here in *England*, in other Countries common. To set slips immediately after *Lammas*, is the surest way. Seed sown may prove well, so they be sown in hot weather, somewhat moist, and good earth: for the herb, though great, is nesh and tender (as I take it) brought from hot Countries to us in the cold North: set thin, it becomes a window well. The use is much in meats, more in Physick, most for Bees.

Rue, or herb of grace, continually green, the slips are set. It lasts long, as Rosemary, Sothernwood, &c. too strong for mine Housewifes pot, unless she will brew Ale therewith, against the plague: let them not seed if you will have him last.

Saffron, every third year his roots would be removed at *Midsummer*, for when all other herbs grow most, it dyeth. It flowreth at *Michael-tide*, and groweth all winter: keep his flowers from birds in the morning, and gather the yellow, (for they

they shape much like Lillies) dry, and after dry them, they be precious, expelling diseases from the heart and stomack.

Savory, seeds and dyes the first year, good for my Housewifes pot and pye.

Sage, set slips in *May*, and they grow aye; let it not seed, it will last the longer. The use is much and common. The Monkish proverb is *tritum*.

Cur moritur homo, cut salvia crescit in horto?

Skerots, the Roots are set when they be parted, as *Piony*, and Flower-deluce at *Michael-tide*, the Root is but small and very sweet, I know none other special use but the Table.

Sweet *Sicily*, long lasting, pleasantly tasting, either the seed sown, or the root parted, or removed, makes increase, it is of like use with parsley.

Strawberries, long lasting, set Roots at *Michael-tide*, or the Spring, they be red, white and green, and ripe, when they be great and soft, some by *Midsummer with us*. The use is, they will cool my Housewife well, if they be put in Wine or Cream with Sugar.

Time, both seeds, slips, and Roots are good, if it seed not, it will last three or four years or more, it smelleth comfortably. It hath much use, namely, in all cold meats, it is good for Bees.

Turnip, is sown: In the second year they bear plenty of seed; they require the same time of sowing that Carrets do; they are sick of the same disease that Cabbages be. The root increaseth much, it is most wholesome, if it be sown in a good and well tempered earth; Soveraign for eyes and bees.

I reckon these herbs onely, because I teach my Country Housewife, not skilful Artists; and it should be an endless labour, and would make the matter tedious to reckon up *Landtheef*, *Stock-Gilly-flowers*, *Charvel*, *Valerian*, *Go to bed at noon*, *Piony*, *Licoras*, *Tansie*, *Garden mints*, *Germander*, *Centaury*, and a thousand such Physick herbs. Let her first grow cunning in this, and then she may inlarge her Garden as her skil and ability increaseth. And to help her the more, I have set down these Observations.

CHAP.

CHAP. IX.

General rules in Gardening.

IN the South parts, Gardening may be more timely, and more safely done, then with us in *Yorkshire*, because our air is not so favourable, nor our ground so good.

2. Secondly, most seeds shake, by turning the good earth, are renewed, their Mother the earth keeping them in her bowels, till the Sun their Father can reach them with his heat.

3. In setting herbs, leave no top more then a handful above the ground, nor more then a foot under the earth.

4. Twine the roots of those slips you set, if they will abide it. Gilly-flowers are too tender.

5. Set moist, and sow dry.

6. Set slips without shanks at any time, except at *Midsummer*, and in frosts.

7. Seeding spoils the most roots, as drawing the heart and sap from the root.

8. Gather for the pot and medicines, herbs tender and green, the sap being in the top, but in Winter the root is best.

9 All the herbs in the Garden for flowers would once in seven years be renewed, or soundly watered with puddle water, except Rosemary.

10. In all your Gardens and Orchards, banks and Seats of Camomile, Penny-royal, Daisies and Violets, are seemly and comfortable.

11. These require whole plots, Artichoaks, Cabbages, Turnips, Parsnips, Onions, Carrets, and (if you will) Saffron and Skerrits.

12. Gather all your seeds, dead, ripe, and dry.

13. Lay not dung to the roots of your herbs, as usually they do: for dung not melted is too hot even for Trees.

14. Thin setting and sowing (so the roots stand not past a foot distance) is profitable, for the herbs will like the better. Greater herbs would have more distance.

15. Set and sow herbs in their time of growth, (except at *Midsummer*,

summer, for then they are too tender) but trees in their time o rest.

16. A good Housewife may, and will gather store of herbs for the pot, about Lammas, and dry them, and pound them, and in winter they will do good service.

Thus have I limmed out a Garden to our Country Housewives, and given them Rules for common herbs. If any of them (as sometimes they are) be knotty, I refer them to Chap. 3. The skill and pains of weeding the Garden with weeding knives of fingers, I refer to themselves, and their maids, willing them to take the opportunity after a shower of rain; withall, I advise the Mistriss either to be present her self, or to teach her maids to know herbs from weeds.

CHAP. X.

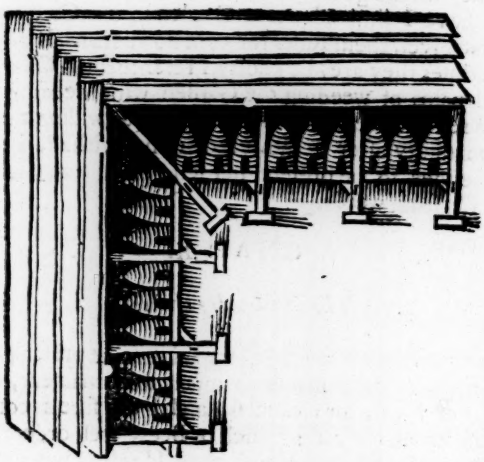
The Husbandry of Bees.

THere remaineth one necessary thing to be prescribed, which in mine opinion makes as much for ornament, as either flowers, or form, or cleanness, and I am sure as commodious as any of, or all the rest: which is Bees, well ordered. And I will not account her any of my good House-wives, that wanteth either Bees, or skilfulness about them. And though I know some have written well, and truly, and others more plentifully upon this theme: yet somewhat have I learned by experience, (being a Bee-master my self) which hitherto I cannot find put into writing, for which I think our House-Wives will count themselves beholding unto me.

The first thing that a Gardener about Bees must be carefull for, is, an house, not stakes and stones abroad, *Sub dio:* for stakes rot and reel, Rain and weather eat your hivers and covers, and cold most of all is hurtful for your Bees. Therefore you must have an house made along a sure dry wall in your Garden, near, or in your Orchard: For Bees love flowers and wood with their hearts. Bee-house.

This the form; a Frame ſtanding on poſts with one floor (if you would have it hold more Hives, two floors) boarded, laid on bearers, and back poſts, covered over with boards, flat-wiſe.

Let the floors be without holes or clifts, leſt in caſting time



the Bees lye out and loyter.

And though your Hives ſtand within an hand breadth the one of another, yet will Bees know their home.

In this frame may your Bees ſtand dry and warm, eſpecially if you make doors, like doors of windows, to ſhroud them in winter, as in an houſe: provided you leave the hives mouth open. I my ſelf have deviſed ſuch an houſe, and I find that it ſtrengthens my Bees much, and my hives will laſt ſix to one.

Hives.

Mr. *Markham* commends hives of wood; I diſcommend them not: but ſtraw hives are in uſe with us, and I think, with all the world, which I commend for nimbleneſs, cloſeneſs, warmneſs, and dryneſs. Bees love no external motions of daubing, or ſuch like. Sometimes occaſion ſhall be offered to lift and turn hives, as ſhall appear hereafter. One light entire hive

hive of straw, in that case, is better than one that is daubed, weighty, and cumbersome. I wish every hive, for a keeping swarm, to hold three pecks at least by measure; for too little hives procure bees, in casting time, either to lye out, and loyter, or else to cast before they be ripe, and strong, and so make weak swarms, and untimely: whereas if they have room sufficient, they ripen timely, and casting seasonably, are strong, and fit for labour presently. Neither would the hive be too great, for then they loyter, and waste meat and time.

Your Bees delight in wood, for feeding, especially for casting, therefore want not an Orchard. A *May*'s swarm is worth a Mares Foal: if they want wood, they be in danger of flying away. Any time before *Midsummer* is good for casting, and timely; before *July* is not evil. I much like Mr. *Markham*'s opinion, for having a swarm in combs of a dead or forsaken hive, so they be fresh and cleanly. To think, that a swarm of your own, or others, will of it self come into any such hive, is a meer conceit, *Experto crede Roberto.* His smearing with hony, is to no purpose, for the other Bees will eat it up. If your swarm knit in the top of a tree, as they will, if the wind beat them not to fall down, let the stool or ladder prescribed in the Orchard do you service. Hiving of Bees.

The less your Spelks are, the less is the wast of your honey, and the more easily will they draw, when you take your Bees. Four Spelks athwart, and one top Spelk are sufficient. The Bees will fasten their combs to the hive. A little Honey is good, but if you want, Fennel will serve to rub your hive withall. The Hive being drest, and ready spelkt, rub'd, and the hole made for their passage, (I use no hole in the Hive, but a piece of wood hoal'd, to save the Hive, and keep out mice) shake in your Bees, or the most of them (for all commonly you cannot get) the remainder will follow. Many use smoak, nettles, &c. which I utterly dislike: for Bees love not to be molested. Ringing in the time of casting is a meer fancy; violent handling of them is simply evil, because Bees of all other creatures love cleanlines, and peace. Therefore handle them leisurely, and quietly, and their Keeper, whom they know, may do with them what he will without hurt: Being hived at night, bring them to their seat. Set your hives all of one year together. Spelks.

Signs of breeding, if they be strong.

1 They will avoid dead young Bees and Droans.

2 They will sweat in the morning, till it run from them, always when they be strong.

Signs of casting.

1 They will fly Droans by reason of heat.

2 The young Swarm will once or twice in some fair season come forth mustring, as though they would cast, to prove themselves, and go in again.

3 The night before they cast, if you lay your ear to the hives mouth, you shall hear two or three, but especially one above the rest, cry, Up, up, up, or Tout, tout, tout, like a Trumpet sounding the alarum to the battel.

Much descanting there is of, and about the master Bee, and their degrees, order, and Goverment: but the truth in this point is rather imagined, then demonstrated. There are some conjectures of it, *viz.* we see in the combs divers greater houses then the rest, and we commonly hear the night before they cast, sometime one Bee, sometime two or more Bees, give a loud and several sound from the rest, and sometimes Bees of greater bodies than the common sort: but what of all this? I lean not on conjectures, but love to set down what I know to be true, and leave these things to them that love to divine.

Keep none weak, for it is hazard oftentimes with loss. Feeding will not help them: for being weak, they cannot come down to meat, if they come down, they dye, because weak Bees cannot abide cold. If none of these, yet will the other Bees, being strong, smell the honey, and come, and spoil, and kill them. Some help is in casting time, to put two weak swarms together, or as Mr. *Markham* well saith, Let them not cast late, by raising them with wood, or stone, but with imps (say I.) An imp is, three or four wreaths wrought as the Hive, the same compass, to raise the Hive withall: but by experience in tryal, I have found out a better way by Clustring, for late or weak swarms; hitherto not found out of any that I know. That is this: After casting time, if I have any stock proud, and hindred from timely casting, with former Winters poverty, or evil weather in casting time, with two handles and crooks fitted for the purpose, I turn up that stock so pestered

Catching.

Clustring.

red with Bees, and set it on the crown, upon which so turned with the mouth upward, I place another empty hive well drest, and spelkt, into which, without any labour, the swarm that would not depart, and cast, will presently ascend, because the old Bees have this quality (as all other breeding creatures have) to expel the young, when they have brought them up.

There will the Swarm build as kindly, as if they had of themselves been cast. But be sure you lay betwixt the Hives some straight and cleanly stick, or sticks, or rather a board with holes, to keep them asunder: otherwise they will joyn their works together so fast, that they cannot be parted. If you so keep them asunder at *Michael-tide*, if you like the weight of your swarm (for the goodness of swarms is tried by the weight) so catched, you may set it by for a stock to keep. Take heed in any case the combs be not broken, for then the other Bees will smell the honey, and spoil them. This have I tried to be very profitable for the saving of Bees.

The Instrument hath this form. The great strait piece of wood;

the rest are irō clasps & nails, the clasps are loose in the staple, two men with two of these fastned to the Hive, will easily turn it up.

They gather not till *July*; for then they be discharged of their young, or else they are become now strong to labour; and now sap in flowers is strong and proud, by reason of time, and force of Sun. And now also in the North (and not before) the herbs of greatest vigour put forth their flowers; as Beans, Fennel, Burrage, &c.

The most sensible weather for them, is heat and draught, because the nesh Bee can neither abide cold nor wet; and showrs (which they well fore-see) do interrupt their labours, unless they fall in the night, and so they further them.

After casting *Time*, you shall benefit your stocks much, if you help them to kill their Droans, which by all probability and judgment, are an idle kind of Bees, and wastful. Some say they breed, and have seen young Droans in taking their honey, which I know is true. But I am of opinion, that there are also Bees Droans.

which

which have lost their stings, and so being as it were gelded, become idle and great: there is great use of them. *Deus & natura nihil fecit frustra.* "They hate the bees, and cause them cast the "sooner; they never come forth, but when they be over-heated; "they never come home loaden. After casting time, and when the bees want meat, "You shall see the labouring Bees fasten on them, "two, three, or four at once, as if they were theeves to be led to "the Gallows, and killing them, they cast them out, and draw "them far from home, as hateful enemies. Our House-wife, if she be the keeper of her own bees (as she had need to be) may with her bare hand in the heat of the day safely destroy them in the hives mouth. Some use towards night, in a hot day, to set before the mouth of the hive a thin board with little holes in it, at which the lesser Bees may enter, but not the Droans; so that you may kill them at your pleasure.

Annoyances. Snails spoil them by night like theeves: they come so quietly, and are so fast, that the Bees fear them not; look early and late, especially in a rainy or dewy evening or morning.

Mice are no less hurtfull, and the rather to Hives of straw: and therefore coverings of straw draw them: they will in, either at the mouth, or shear themselves an hole: The remedy is good Cats, Rats-bane, and Watching.

The cleanly Bee hateth the smoak as poyson; therefore let your bees stand neerer your Garden, then your Brew-house or Kitchen.

They say Sparrows and Swallows are enemies to Bees, but I see it not.

More Hives perish by Winters cold, then by all other hurts: for the Bee is tender and nice, and only lives in warm weather, and dyes in cold: And therefore, let my House-wife be perswaded, that a warm dry house before described, is the chiefest help she can make her bees against this, and many more mischiefs. Many use against cold in Winter, to stop up their hive close; and some set them in houses, perswading themselves, that thereby they relieve their bees. First, tossing, moving, is hurtfull. Secondly, in houses, going, knocking & shaking is noisome. Thirdly, too much heat in an house is unnatural for them: But lastly, and especially, Bees cannot abide to be stopt up close; for at every warm season of the Sun they revive, and living eat, and eating must needs purge

purge abroad : in her house the cleanly Bee will not purge her self. Judge you what it is for any living creature, not to disburthen nature. Being shut up in calm seasons, lay your ear to the Hive, and you shall hear them yearn and yell, as so many hundred prisoners. Therefore impound not your Bees, so profitable aud free a creature.

Taking of Bees.

Let none stand above three years, else the combs will be black and knotty, your honey will be thin and uncleanly ; and if any cast after three years, it is such as have swarms of old bees, kept all together, which is great loss. Smoaking with Raggs, Rozen, or Brimstone, many use ; some use drowning in a tub of clean water, and the water well brew'd, will be good botchet. Draw out your spelks immediately with a pair of pinchers, left the Wood grow soft, and swell, and so will not be drawn, then must you cut your hive.

Straining Honey.

Let no fire come near your honey, for fire softneth the wax, and dross, and makes them run with the honey : Fire softneth, weakneth, and hindreth honey from purging. Break your combs small, when the dead empty combs are parted from the loaden combs, into a sieve, born over a great bowl, or vessel with two staves, and so let it run two or three dayes : The sooner you tun it up, the better will it purge. Run your Swarm honey by it self, and that shall be your best. The elder your Hives are, the worse is your honey.

Vessels.

Usual Vessels are of Clay, but after wood be satiated with Honey (for it will leak at first: for honey is marvelously searching, though thick, and therefore vertuous) I use it rather, because it will not break so soon with falls, frosts, or otherwise, and greater vessels of clay will hardly last.

When you use your Honey, with a spoon take off the skin, which it hath put up.

And it is worth the regard, that bees thus used, if you have but forty stocks, shall yield you more commodity clearly than forty Acres of Ground.

And thus much may suffice, to make good Housewifes love, and have good Gardens and Bees.

Deo laus.

The

The Contents of the Country House-wifes Garden.

Chap. 1. *The Soyl.* p. 69.
Chap. 2. *Site.* p. 70.
Chap. 3. *Form.* ibid.
Chap. 4. *Quantity.* 79.
Chap. 5. *Fences.* ibid.
Chap. 6. *Two Gardens.* ibid.
Chap. 7. *Division of herbs.* 79.
Chap. 8. *The Husbandry of herbs.* ibid.
Chap. 9. *General Rules.* 84.
Chap. 10. *The Husbandry of Bees.* p. 85.
Bee-house. ibid.
Hives. p. 86.
Hiving of Bees. p. 87.
Spelks. ibid.
Catching. p. 88.
Clustering. ibid.
Droans. p. 89.
Annoyances. p. 90.
Taking of Bees. p. 91.
Straining honey. ibid.
Vessels. ibid.

A

MOST PROFITABLE

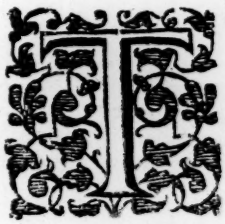
New Treatiſe, from approved Experience, of the Art of Propagating Plants.

BY

SIMON HARWARD.

CHAP. I.

The Art of Propagating Plants.



THere are four ſorts of Planting or Propagating, as in laying of ſhoots or little branches, whiles they are yet tender, in ſome pit made at their foot, as ſhall be ſaid hereafter, or upon a little ladder or basket of earth, tied to the bottom of the branch, or in boaring a Willow through, and putting the branch of the tree into the hole, as ſhall be fully declared in the Chapter of Grafting.

There are likewiſe Seaſons to Propagate in, but the beſt is in 1.

the Spring, and *March*, when the trees are in the flowre, and do begin to grow lusty. The young planted Cyens or little grafts must be propagated in the beginning of Winter, a foot deep in the earth, and good manure mingled amongst the earth, which you shall cast forth of the pit wherein you mean to propagate it, to tumble it in upon it again. In like manner, your superfluous Cyens, or little plants must be cut close by the earth, when as they grow about some small Imp, which we mean to propagate, for they will do nothing but rot: For to propagate, you must dig the earth round about the tree, that so your roots may be laid in a manner half-bare. Afterwards draw into length the pit on that side where you mean to propagate, and according as you perceive that the roots will be best able to yield, and
2. be governed in the same pit, to use them, and that with all gentleness, and stop close your Cyens, in such sort, as that the wreath which is in the place where it is grafted, may be a little lower than the Cyens of the new wood growing out of the earth, even so high as it possible may be. If the trees that you would propagate be somewhat thick, and thereby the harder to ply, and somewhat stiff to lay in the pit; then you may wet the stock almost to the midst, betwixt the root and the wreathing place, so with gentle handling of it, bow down into the pit the wood which the grafts have put forth, and that in as round a compass as you can, keeping you from breaking of it; afterward lay over the cut with gummed wax, or with gravel and sand.

CHAP. II.

Grafting in the Bark.

GRafting in the Bark, is used from mid *August*, to the beginning of Winter, and also when the Western wind beginneth to blow, being from the 7 of *February*, unto the 11 of *June*. But there must be had care, not to graff in the bark in any rainy season, because it would wash away the matter of joyning the one and the other together, and so hinder it.

Grafting in the bud is used in the Summer time, from the end of *May* untill *August*, as being the time when the trees are strong and lusty, and full of sap and leaves. To wit, in a hot Country,

Country, from the midst of *June* unto the midst of *July*, but in cold countries to the midst of *August*, after some small showrs of Rain.

If the Summer be so exceedingly dry, as that some trees do withhold their sap, you must wait the time till it do return.

Graft from the full of the Moon, untill the end of the old.

You may graft in a cleft, without having regard to Rain, for the sap will keep it off.

You may graft from mid *August*, to the beginning of *November*: Cows dung with straw doth mightily preserve the graft.

It is better to graft in the evening than the morning.

The furniture and tools of a Grafter, are a basket to lay his grafts in, Clay, Gravel, Sand, or strong Earth to draw over the plants cloven, Moss, Woollen cloaths, barks of Willow to joyn to the late things and earth before spoken, and to keep them fast: Oziers to tye again upon the bark, to keep them firm and fast, gummed Wax to dress and cover the ends and tops of the grafts newly cut, that so the rain and cold may not hurt them, neither yet the sap rising from below, be constrained to return again unto the shoots. A little Saw or hand-Saw, to saw off the stock of the plants; a little Knife or Pen-knife to graff, and to cut and sharpen the grafts, that so the bark may not peel nor be broken; which often commeth to pass when the graft is full of sap. You shall cut the graff so long, as that it may fill the cliff of the plant, and therewithall it must be left thicker on the bark-side, that so it may fill up both the cliff and other incisions, as any need is to be made, which must be alwayes well ground, well burnished without all rust. Two wedges, the one broad for thick trees, the other narrow for less and tender trees, both of them of box, or some other hard and smooth wood, or steel, or of very hard iron, that so they may need less labour in making them sharp.

A little hand-bill to set the plants at more liberty, by cutting off superfluous boughs, helved of Ivory, box, or brasil.

CHAP. III.

Grafting in the Cleft.

THe manner of Grafting in a Cleft, to wit, the ſtock being cloven, is proper not only to trees, which are as great as a man's legs or arms, but alſo to greater. It is true, that being trees cannot eaſily be cloven, in their ſtock: that therefore it is expedient to make inciſion in ſome one of their branches, and not in the main body, as we ſee to be practiſed in great Apple-trees, and great Pear-trees, and as we have already declared heretofore.

To graft in the cleft, you muſt make choice of a graft that is full of ſap and juyce, but it muſt not be but till from after *January* untill *March*: And you muſt not thus graft in any tree that is already budded, becauſe a great part of the juyce and ſap would be already mounted up on high, and riſen to the top, and there diſperſed and ſcattered hither and thither, into every ſprig and twig, and uſe nothing welcome to the graft.

You muſt likewiſe be reſolved not to gather your graft the day you graft in, but ten or twelve dayes before; for otherwiſe, if you graft it new gathered, it will not be able eaſily to incorporate it ſelf with the body, and ſtock, where it ſhall be grafted, becauſe that ſome part of it will dry, and by this means will be a hindrance in the ſtock to the riſing up of the ſap, which it ſhould communicate unto the graft, for the making of it to put forth, and whereas the dryed part will fall a crumbling, and breaking through his rottenneſs, it will cauſe to remain a concavity, or hollow place in the ſtock, which will be an occaſion of a like inconvenience to befall the graft. Moreover, the graft being new and tender, might eaſily be hurt of the bands, which are of neceſſity to be tyed about the Stock, to keep the graft firm and faſt. And you muſt further ſee, that your Plant was not of late removed, but that it have already fully taken Root.

7. When you are minded to graft many grafts into one Cleft, you muſt ſee that they be cut in the end all alike.

See that the grafts be of one length, or not much differing, and it is enough, that they have three or four eylets without the Wrench when the Plant is once ſawed, and lopped off all his bran-

branches, if it have many: then you must leave but two at the most before you come to the cleaving of it; then put to your little Saw, or your Knife, or other edged tool that is very sharp, cleave it quite thorough the middest in gentle and soft sort: First, tying the stock very sure, that so it may not cleave further then is need; and then put to your wedges into the cleft untill such time as you have set in your grafts, and in cleaving of it, hold the Knife with the one hand, and the tree with the other, to help to keep it from cleaving too far. Afterwards put in your wedge of Box, or Brasil, or Bone, at the small end, so that you may the better take it out again when you have set in your grafts.

If the stock be cloven, or the bark loosed too much from the wood, then cleave it down lower, and set your grafts in, and look that their Incision be fit, and very justly answerable to the cleft, and that the two saps, first, of the plant and graft, be right and even set one against the other, and so handsomely fitted, as that there may not be the least appearance of any cut or cleft. For if they do not thus jump one with another, they will never take one with another, because they cannot work their seeming matter, and as it were cartilaginous glue in convenient sort or manner to the gluing of their joynts together. You must likewise beware not to make your cleft overthwart the pitch, but somewhat aside.

The bark of your plant being thicker than that of your graft, you must set the graft so much the more outwardly in the cleft, that so the two saps may in any case be joyned, and set right the one with the other, but the rind of the plant must be somewhat more out than that of the grafts or cloven side.

To the end that you may not fail of this work of imping, you must principally take heed, not to over-cleave the stocks of your trees. But before you widen the cleft with your wedges, bind and go about the stock with two or three turns, and that with an Ozier, close drawn together, underneath the same place, where you would have your cleft to end, that so your stock cleave not too far, which is a very usual cause of the miscarrying of grafts, insomuch as hereby the cleft standeth so wide and open, as that it cannot be shut, and so not grow together again: but in the mean time spend it self, and breaketh out all his life in 10.

that

that place which is the cause that the stock and the Graft are both split. And this falleth out most often in plum-trees, and branches of trees. You must be carefull to joyn the rinds of your grafts and plants, that nothing may continue open, to the end that the wind, moisture of the Clay or Rain running upon the grafted place, do not get in: when the plant cleaveth very streight, there is not any danger nor hardness in sloping down the graft.

10. If you leave it somewhat uneven or rough in some places, or that the saps both of the one and the other may the better grow, and be glewed together, when your grafts are once well joyned to our plants, draw out your wedges very softly, lest you displace them again: you may leave therewith in the cleft some small end of a wedge of green wood, cutting it very close with the head of the Stock: Some cast glue into the cleft, some sugar, and some gummed Wax.

11. If the Stock of the Plant, whereupon you intend to graft, be not so thick as your graft, you shall graft it after the fashion of a Goats foot, make a cleft in the stock of the plant, not direct, but byas, and that smooth and even, not rough: then apply and make fast thereto the graft with all his bark on, and answering to the bark of the Plant. This being done, cover the place with the fat earth and moss of the Woods tyed together with a strong band: stick a pole of Wood by it to keep it stedfast.

CHAP. IV.

Grafting like a Scutcheon.

IN grafting after the manner of a Scutcheon, you shall not vary not differ much from that of the Flute or pipe, save onely that the Scutcheon-like graft having one eylet, as the other hath, yet the wood of the tree whereupon the Scutcheon-like graft is grafted hath not any knob, or bud, as the wood whereupon the graft is grafted after the manner of a pipe.

12. In Summer, when the trees are well replenished with sap, and that their new Cyens begin to grow somewhat hard, you shall take a shoot at the end of the chief branches of some noble and reclaimed trees, whereof you would fain have some fruit, and not many of his old store or wood, and from thence raise a good eylet, the tail and all thereof to make your grafts. But when you chuse, take the thickest, and grossest, divide the tail in the

the midſt before you do any thing elſe, caſting away the leaf (if it be not a pear-plum-tree, for that would have two or three leaves) without removing any more of the ſaid tail; afterward with the point of a ſharp knife, cut off the Bark of the ſaid ſhoot, the pattern of a ſhield, of the length of a nail.

In which there is onely one eylet higher than the midſt, together with the reſidue of the tail which you left behind; and for the lifting up of the ſaid graft in Scutcheon, after that you have cut the bark of the ſhoot round about, without cutting of the wood within, you muſt take it gently with your thumb, and in putting it away you muſt preſs upon the wood from which you pull it, that ſo you may bring the bud and all away together with the Scutcheon; for if you leave it behind with the wood, then were the Scutcheon nothing worth. You ſhall find out if the Scutcheon be nothing worth, if looking within when it is pulled away from the wood of the ſame ſuit, you find it to have a hole within, but more manifeſtly, if the bud do ſtay behind in the wood, which ought to have been in the Scutcheon. 13.

Thus your Scutcheon being well raiſed and taken off, hold it a little by the tail betwixt your lips, without wetting of it, even untill you have cut the bark of the tree where you would graft it, and look that it be cut without any wounding of the wood within, after the manner of a crutch, but ſomewhat longer than the Scutcheon that you have to ſet in it, and in no place cutting the wood within; after you have made inciſion, you muſt open it, and make it gape wide on both ſides, but in all manner of gentle handling, & that with a little Sizers of bone, and ſeparating the wood and the bark a little within, even ſo much as your Scutcheon is in length and breadth: you muſt take heed that in doing hereof, you do not hurt the bark. 14.

This done, take your Scutcheon by the end, and your tail which you have left remaining, and put into your inciſion made in your tree, lifting up ſoftly your two ſides of the inciſion with your ſaid Sizers of bone, and cauſe the ſaid Scutcheon to joyn, and lye as cloſe as may be, with the wood of the tree, being cut as aforeſaid, in waying a little upon the end of your rind ſo cut; and let the upper part of your Scutcheon lye cloſe unto the upper end of your inciſion, or bark of your ſaid tree: afterwards 15.

bind

bind your Scutcheon about with a band of Hemp, as thick as a pen of a quill, more or less, according as your tree is small or great, taking the same Hemp in the middest, to the end that either part of it may perform a like service; and wreathing and binding of the said Scutcheon into the incision of a tree, and it must not be tyed too streight, for that will keep it from taking, the joyning of the one sap with the other being hindred thereby, and neither the Scutcheon nor yet the Hemp must be moist or wet; and the more justly to bind them together, begin at the back-side of the tree, right over against the middest of the incision, and from thence come forword to joyn them before, above the eylet and tail of the Scutcheon, crossing your band of Hemp so oft as the two ends meet, and from thence returning back again, come about and tye it likewise underneath the eylets, and thus cast about your band still backward and forward untill the whole clift of the incision be covered above and below
17. with the said Hemp, the eylet onely excepted, and his tail, which must not be covered at all; his tail will fall away one part after another, and that shortly after the ingrafting, if so be the Scutcheon will take. Leave your Trees and Scutcheons thus bound for the space of one month, and the thicker, a great deal longer time. Afterward look them over, and if you perceive them to grow together, untie them, or at leastwise cut the Hemp behind them, and leave them uncovered. Cut also your branch two or three fingers above that, that so the imp may prosper the better; and thus let them remain till after winter, about the month of *March* and *April*.

18. If you perceive that the bud of your Scutcheon do swell and come forward, then cut off the tree three fingers or thereabouts, above the Scutcheon; for if it be cut off too near the Scutcheon, at such time as it putteth forth his first blossom, it would be a means greatly to hinder the flowing of it, and cause also that it should not thrive and prosper well: after that one year is past, and that the shoot beginneth to be strong, beginning to put forth the second bud and blossom, you must go forward to cut off in byas-wise the three fingers in the top of the tree which you left there, when you cut it in the year going before, as hath been said.

When

When your shoot shall have put forth a great deal of length, 19.
you may stick down there, even hard joyned thereunto, little stakes, tying them together very gently and easily; and these shall stay your shoots and prop them up, letting the wind from doing any harm unto them. Thus you may graft white Roses in red, and red in white. Thus you may graft two or three Scutcheons, provided that they be all of one side; for they will not be set equally together in height, because then they would be all
starvelings; neither should they be directly one over another; 20.
for the lower would stay the rising up of the sap of the Tree, and so those above should consume in penury, and undergo the aforesaid inconvenience. You must note, that the Scutcheon which is gathered from the Cyen of a tree whose fruit is sowr, must be cut in square form, and not in the plain fashion of a Scutcheon. It is ordinary to graff the sweet Quince-Tree, bastard Peach-tree, Apricock-tree, Jujube-tree, sowr Cherry-tree, sweet Cherry-tree, and Chestnut-tree, after this fashion, howbeit they may be grafted in the cleft more easily, and more profitably; although divers be of a contrary opinion, as thus: Take the grafts of sweet Quince-tree, and Bastard Peach-tree, of the fairest wood, and best fed that you can find, growing upon the wood of two years old, because the wood is not so firm and solid as the others, and you shall graft them upon small Plum-tree stocks, being of the thickness of ones thumb; these you shall
cut after the manner of a Goats foot: you shall not go about to 21.
make the cleft of any more sides then one, being about a foot high from the ground; you must open it with your small wedge: and being thus grafted, it will seem to you that it is open but of one side; afterward you shall wrap it up with a little Moss, putting thereto some gummed Wax, or Clay, and bind it up with Oziers to keep it surer, because the stock is not strong enough it self to hold it, and you shall furnish it every manner of way, as others are dealt withall; this is most profitable.

The time of Grafting.

All Months are good to graft in, (the Month of *October* and *November* onely excepted) But commonly, graft at that time of

the winter, when the ſap beginneth to ariſe.

In a cold Country graft later, in a warm Country earlier.

The beſt time generally is from the firſt of *February*, untill the firſt of *May*.

The grafts muſt always be gathered in the old of the Moon.

For grafts chooſe ſhoots of a year old, or at the furthermoſt two years old.

If you muſt carry grafts far, prick them into a Turnip newly gathered, or lay earth about the ends.

If you ſet ſtones of Plums, Almonds, Nuts, or Peaches: Firſt, let them lye a little in the Sun, and then ſteep them in Milk or Water three or four dayes, before you put them into the earth.

Dry the Kirnels of Pippins, and ſow them in the end of *November*.

The ſtone of a Plum-tree muſt be Set a foot deep, in *November* or *February*.

The Date-ſtone muſt be Set the great end downwards, two cubits deep in the earth, in a place enriched with dung.

The Peach-ſtone would be Set preſently after the Fruit is eaten, ſome quantity of the fleſh of the Peach remaining about the ſtone.

If you would have it to be excellent, graft it afterward upon an Almond-tree.

The little Cyens of Cherry-trees, grown thick with hair, rots, and thoſe alſo which do grow up from the Roots of the great Cherry-trees, being removed, do grow better and ſooner then they which come of ſtones; but they muſt be removed and planted, while they are but two or three years old, the branches muſt be lopped.

A very profitable Invention, for the speedy Planting of an Orchard of Fruit-Trees.

ABout the end (or rather the middle) of *June*, the sap being then in the boughs or Tops of the Trees, let some one of discretion go up into the boughs of the Tree intended, and with a keen-knife cut the bark of some smooth bough, so chosen, round about the same, quite through the same bark, to the very bare wood, in two places, (toward the but of the bough) a full hand breadth the one from the other, and take off the bark clean clearly from the said bough, and cast it away, and wipe the sap off that bared place; Then take some of the stiffest clay you can have, and wrap it hard, round about the said bared place, (that it may stop the sap when it descendeth;) bind on this clay with fallow slings, or the like, very hard; let this clay be two inches thick at least. Then prepare a certain quantity of good rank mould, tempered with short muck and misken water, and make mortar thereof, and wrap a good quantity of it as big as a foot-ball, upon the firm bark remaining close above the said clay, that it may touch the same; put moss upon it, and, as before, bind it well, and so let it continue growing upon the same Tree till *February*. Then with a fine saw carefully take off the said bough close below the clay, not perishing the upper mortar, and set that bough, with the clay and mortar on it, in some good ground, and there let it remain to grow; for the sap it cannot pass downward for the clay, but stayeth in the upper mortar, and breeds roots, and possibly (God willing) may bear fruit the next Summer following. Thus you may order many such boughs as aforesaid, and quickly plant an Orchard of bearing Trees. If the bough be as big as the small of ones leg, it is so much the better: *probatum est.*

The Contents of the Art of *Propagating Plants.*

THe Art of Propagating Plants. 93.
Grafting in the Bark. 95.
Grafting in the cleft. 96.
Grafters tools.
Time of Planting and Setting.
Time of grafting.
How to cut the stumps in grafting.
Sprouts and imps: how gathered.
Grafting like a Scutcheon. 98.
Innoculation in the Bark.
Emplaister-wise grafting.
To prick sticks to bear the first year.
To have Cherries or Plums without stones.
To make Quinces great.
To Set stones of Plums.
Dates, Nuts, and Peaches.
To make fruit smell well.
To plant Cherry-trees.

THE

THE

HUSBAND-MAN'S Fruitfull Orchard.

For the true ordering of all ſorts of Fruits in their due ſeaſons; and how double increaſe comes by care in gathering year after year: as alſo the beſt way of carrying by land or by water, with their preſervation for longeſt continuance.

OF all ſtone Fruit, Cherries are the firſt to be gathered: of which, though we reckon four ſorts; *Engliſh*, *Flemmiſh*, *Gaſcoign*, and *Black*, yet are they reduced to two, the early, and the ordinary; the early are thoſe whoſe grafts came firſt from *France* and *Flanders*, and are now ripe with us in *May*; the ordinary is our own natural Cherry, and is not ripe before *June*: they muſt be carefully kept from Birds, either with nets, noiſe, or other induſtry.

They

Gathering of Cherries.

They are not all ripe at once, nor may be gathered at once, therefore with a light Ladder, made to stand of it self without hurting the branches, mount to the Tree, and with a gathering hook, gather those which be full Ripe, and put them into your Cherry-pot, or Kyndo, hanging by your side, or upon any bough you please, and be sure to break no stalk, but that the cherry hangs by, and pull them gently, lay them down tenderly, and handle them as little as you can.

To carry Cherries.

For the conveyance or portage of Cherries, they are best to be carried in broad Baskets like sives, with smooth yielding bottoms, only two broad laths going along the bottom; and if you do transport them by ship, or boat, let not the sives be filled to the top, least setting one upon another, you bruise and hurt the Cherries: if you carry by horse-back, then panniers well lined with Fern, and packt full and close, is the best and safest way.

Other stone-fruit.

Now for the gathering of all other stone fruit, as Nectarines, Apricocks, Peaches, Pear-Plums, Damsons, Bullis, and such like, although in their several kinds, they seem not to be ripe at once on one Tree; yet when any is ready to drop from the Tree, though the other seem hard, yet they may also be gathered, for they have received the full substance the tree can give them; and therefore the day being fair, and the dew drawn away, set up your Ladder, and as you gathered your Cherries so gather them: onely in the bottom of your large sives, where you part them, you shall lay Nettles, and likewise in the top, for that will ripen those that are most unready.

Gathering of Pears.

In gathering of Pears are three things observed: To gather for expence, for transportation, or to sell to the Apothecary. If for expence, and your own use, then gather them as soon as they change, and are as it were half ripe, and no more but those which are changed, letting the rest hang till they change also: for thus they will ripen kindly, and not not so soon as if they were full ripe at the gathering. But if your Pears be to be transported far, either by Land or Water, then pull one from the Tree, and cut it in the middest, and if you find it hollow about the coar, and the kernel a large space to lye in, although no Pear be

be ready to drop from the Tree, yet then they may be gathered, and then laying them on a heap one upon another, as of necessity they must be for transportation, they will ripen of themselves, and eat kindly; but gathered before, they will wither, shrink, and eat rough, losing not onely their taste, but beauty.

Now for the manner of gathering, albeit some climb into the trees by the boughs, and some by Ladder, yet both is amiss; the best way is with the Ladder before spoken of, which standeth of it self, with a basket and a line, which being full, you must gently let down, and keeping the string still in your hand, being emptied, draw it up again, and so finish your labour, without troubling your self, or hurting the Tree.

Now, touching the gathering of Apples, it is to be done according to the ripening of the fruit; your Summer Apples first, and the Winter after. Gathering of Apples.

For Summer fruit, when it is ripe, some will drop from the Tree, and Birds will be pecking at them: But if you cut out one of the greenest, and find it as was shew'd you before of the Pear, then you may gather them, and in the house they will come to their ripeness and perfection. For your Winter-fruit, you shall know the ripeness by the observation before shewed; but it must be gathered in a fair, Sunny, and dry day, in the wain of the Moon, and no Wind in the East, also after the dew is gone away; for the least wet or moisture will make them subject to rot and mildew; also you must have an apron to gather in, and to empty into the great basket, and a hook to draw the boughs unto you, which you cannot reach with your hands at ease: The apron is to be an Ell every way, loopt up to your girdle, so as it may serve for either hand without any trouble; and when it is full, unloose one of your loops, and empty it gently into the great basket, for in throwing them down roughly, their own stalks may prick them, and those which are prickt, will ever rot. Again, you must gather your fruit clean without leaves or brunts, because the one hurts the Tree, for every brunt would be a stalk for fruit to grow upon; the other hurts the fruit by bruising, and pricking it, as it is laid together, and there is nothing sooner rotteth

fruit,

fruit, then the green and withered leaves lying among them; neither must you gather them without any stalk at all: for such fruit will begin to rot where the stalk stood.

To use the fallings.

For such fruit as falleth from the Trees, and are not gathered, they must not be laid with the gathered fruit; and of fallings there are two sorts, one that falls through ripeness, and they are best, and may be kept to bake or roast: the other windfals, falling before they are ripe, and they must be spent as they are gathered, or else they will wither and come to nothing; and therefore it is not good by any means to beat down fruit with Poles, or to carry them in carts loose and jogging, or in sacks where they may be bruised.

Carriage of fruit.

When your fruit is gathered, you shall lay them in deep Baskets of Wicker, which shall contain four or six bushels, and so between two men, carry them to your Apple Loft, and in shooting, or laying them down, be very carefull that it be done with all gentleness, and leasure, laying every sort of fruit severally by it self; but if there be want of room, having so many sorts that you cannot lay them severally, then some such fruit as is nearest in taste and colour, and of Winter fruit, such as will taste alike, may, if need require, be laid together, and in time you may separate them, as shall be shewed hereafter. But if your fruit be gathered far from your Apple-loft, then must the bottoms of your Baskets be lined with green Fern, and draw the stubborn ends of the same through the Basket, that none but the soft leaf may touch the fruit, and likewise cover the tops of the Baskets with Fern also, and draw a small cord over it, that the Fern may not fall away, nor the fruit scatter out, or jogg up and down; and thus you may carry fruit by Land, or by Water, by Boat, or Cart, as far as you please: and the Fern doth not onely keep them from bruising, but also ripens them, especially Pears. When your fruit is brought to your Apple-Loft, or store-house, if you find them not ripened enough, then lay them in thicker heaps upon Fern, and cover them with Fern also: and when they are neer ripe, then uncover them, and make the heaps thinner, so as the air may pass through them; and if you will not hasten the ripening of them, then lay them on the boards without

out any Fern at all. Now for Winter, or long lasting Pears, they may be packt either in Fern or Straw, and carried whither you please; and being come to the journies end, must be laid upon sweet straw: but beware the room be not too warm, nor windy, and too cool, for both are hurtfull: but in a temperate place, where they may have air, but not to much.

Wardens are to be gathered, carried, packt, and laid as Winter Pears are. Of Wardens.

Medlers are to be gathered about *Michaelmas*, after the frost hath toucht them; at which time they are in their full growth, and will then be dropping from the tree, but never ripe upon the tree. When they are gathered, they must be laid in a basket, sieve, barrel, or any such cask, and wrapt about with woollen cloaths, under, over, and on all sides, and also some weight laid upon them, with a board between: for except they be brought into a heat, they will never ripen kindly, or taste well. Of Medlers.

Now when they have lain till you think some of them be ripe, the ripest, still as they ripen, must be taken from the rest; therefore powr them out into another sieve or basket leisurely, that so you may well find them that be the ripest, letting the hard ones fall into the other basket, and those which be ripe laid aside: the other that be half ripe sever also into a third sieve or basket; for if the ripe and half ripe be kept together, the one will be mouldy, before the other be ripe. And thus do till all be throughly ripe.

Quinces should not be laid with other fruit; for the scent is offensive both to other fruit, and to those that keep the fruit or come amongst them; therefore lay them by themselves upon sweet straw, where they may have air enough: they must be packt like Medlers, and gathered with Medlers. Of Quinces.

Apples must be packt in Wheat or Rye straw, and in maunds or baskets loined with the same, and being gently handled, will ripen with such packing and lying together. If several sorts of apples be packt in one maund or basket, then between every sort lay sweet straw of a pretty thickness. To pack Apples.

Apples must not be powred out, but with care and leisure: first, the straw pickt clean from them, and then gently Emptying and laying apples.

take out every several sort, and place them by themselves: but if for want of room you mix the sorts together, then lay those together that are of equal lasting; but if they have all one taste, then they need no separation. Apples that are not of like colours should not be laid together, and if any such be mingled, let it be amended, and those which are first ripe, let them be first spent, and to that end, lay those apples together, that are of one time of ripening; and thus you must use Pippins also, yet will they indure bruises better than any other fruit, and whilst they are green will heal one another.

Difference in fruit.

Pippins though they grow of one tree, and in one ground, yet some will last better than other-some, and some will be bigger then others of the same kind, according as they have more or less of the Sun, or more or less of the droppings of the trees or upper branches: therefore let every one make most of that fruit which is fairest and longest laging. Again, the largeness and goodness of fruit consists in the age of the tree; for as the tree increaseth, so the fruit increaseth in bigness, beauty, taste, and firmness: and otherwise as it decreaseth.

Transporting fruit by water.

If you be to transport your fruit far by water, then provide some dry hogsheads or barrels, and pack in your apples, one by one, with your hand, that no empty place may be left, to occasion sogging; and you must line your vessel at both ends with fine sweet straw, but not the sides, to avoid heat; and you must then bore a dozen holes at either end, to receive air so much the better, and by no means let them take wet. Some use, that transport beyond seas, to shut the fruit under hatches upon straw; but it is not so good, if casks may be gotten.

When not to transport fruit.

It is not good to transport fruit in *March*, when the wind blows bitterly, nor in frosty weather, neither in the extream heat of Summer.

To convey small store of fruit.

If the quantity be small you would carry, then you may carry them in dossers or paniers, provided they may be ever filled close; and that Cherries and Pears be lined with green fern, and Apples with sweet straw; and that, but at the bottom and tops, not on the sides.

Rooms for fruit.

Winter fruit must lye neither too hot, nor too cold, too close, nor too open for; all are offensive. A low Room or Cellar that

that is sweet, and either boarded or paved, and not too close, is good from *Christmas* till *March*; and Rooms that are seiled over-head, and from the ground, are good from *March* till *May*, then the Cellar again, from *May* till *Michaelmas*. The apple-loft would be seiled or boarded, which if it want, take the longest Rye-straw, and raise it against the walls, to make a fence as high as the fruit lyeth, and let it be no thicker than to keep the fruit from the wall, which being moist, may do hurt, or if not moist, then the dust is offensive.

There are some fruit which will last but untill *Allhallantide*; they must be laid by themselves: then those which will last till *Christmas*, by themselves; then those which will last till it be *Candlemas*, by themselves; those that will last till *Shrove-tide*, by themselves; and Pippins, Apple-Johns, Pear-mains, and Winter Russettings, which will last all the year, by themselves. Sorting of fruit.

Now if you spy any rotten fruit in your heaps, pick them out, and with a Tray for the purpose, see you turn the heaps over, and leave not a tainted Apple in them, dividing the hardest by themselves, and the broken skinned by themselves to be first spent, and the rotten ones to be cast away; and ever as you turn them, and pick them, under-lay them with fresh straw: thus shall you keep them for your use, which otherwise would rot suddenly.

Pippins, John-Apples, Pear-mains, and such like long lasting fruit, need not to be turned till the week before *Christmas*, unless they be mixt with the other of riper kind, or that the fallings be also with them, or much of the first straw left amongst them: the next time of turning is at *Shrove tide*, and after that once a month till *Whitson-tide*, and after that, once a fortnight; and ever in the turning lay your heaps lower and lower, and your straw very thin: provided you do none of this labour in any great frost, except it be in a close Cellar. At every thaw, all fruit is moist, and then they must not be touched: neither in rainy weather, for then they will be dank also; and therefore at such seasons it is good to set open your windows and doors, that the air may have free passage to dry them, and at nine of the clock in the forenoon in Winter, and at six in the forenoon, Time of turning fruit.

and at eight at night in Summer; only in *March*, open not your windows at all.

All lasting fruit, after the midst of *May*, begin to wither, because then they wax dry, and the moisture gone which made them look plump, they must needs wither, and be small; and nature decaying, they must needs rot. And thus much touching the ordering of fruits.

FINIS.
